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CANADIAN WAR FINANCING

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THE record of Canadian war financing—from September, 1939, to the budget of June, 1942—is not marked by the use of novel devices or the enunciation of new principles. Such virtues as characterize it arise from a continually revised objective examination of the economic tasks which it is the function of finance to effect or facilitate.

There have been three fundamental elements in the background of Canadian war finance.

First, in August, 1939, at the onset of war, Canadian industry and agriculture were relatively depressed. Export prices (and also farm and raw-material prices) were lower than they had been for some years. A record wheat crop was awaiting sale with market prices nearly 20 cents a bushel below the price guaranteed by the government. Construction activity was at a depressed level. Unemployment was substantial and had been increasing. The war, in prospect, was a war of machines and obviously called for a great increase in industrial output and a great expansion of industrial plant in a country in which the primary and processing industries had hitherto been predominant. Fiscal policy must, therefore, stimulate capacity operation and a major industrial revolution. The problems of curtailment and diversion would follow.

Second, the United States was in a similar position of semidepression. Canadian industry was closely integrated with that of the United States and depended on it for equipment, supplies, and some technical services; yet the United States was separated from Canada by her nonbelligerency as defined by the Neutrality Act. It was, therefore, certain that, as Canadian industry developed and expanded its war program and increased its imports, Canada's high propensity to import would create an acute shortage of United States dollars. On the other side, her position as a food producer and the steps taken to establish industrial plants for supplying munitions and equipment to the United Kingdom were such that it was equally inevitable that she should be *long* on sterling and the United Kingdom *short* on Canadian dollars.

Third, at the outset of the war the Royal Commission on Dominion-Provincial Relations had completed an exhaustive study of the financial problems of federalism in Canada. The commission issued a comprehensive and fundamental report, recommending, among other things, a reallocation of functions and tax sources between the Dominion and the provinces. Although the attainment of some of the objects of the commission have been postponed until after the war, the burden of war finance has been such as to intensify the financial difficulties of federalism.

These three fundamental, though unequal, elements have provided three themes running through Canadian war finance.

WAR TAXATION, 1939–42

The first war budget, in September, 1939, was of necessity a hastily drawn financial plan. It provided an initial war appropriation. On the revenue side it increased the tobacco and liquor taxes, added 20 per cent to the income tax, and provided for an excess profits tax. The Excess Profits Tax Act was, however, so hastily drafted as to be not much more than formal notice to business that such a tax would be levied during the war.

The minister of finance made clear in his speech that he conceived the role of finance in wartime to be, in the initial period, that of facilitating productive expansion and industrial mobilization and, in the following period, when production had begun to

roll and pay rolls had risen, that of diverting to the uses of the government the mounting purchasing power of the civilian buyer. It was made quite clear that at the appropriate time the government was prepared to impose heavy taxation and "to follow so far as may be practicable a pay-as-you-go policy."

TABLE 1

SUMMARY OF REVENUE AND EXPENDITURE FOR FISCAL YEARS ENDING MARCH 31

(In Millions of Dollars)

	1938–39*	1939–40*	1940–41*	1941–42†	1942–43‡
Ordinary expenditure	413.0	389.3	390.6	444.0	523
(Including interest on public debt)	(128.0)	(129.3)	(139.2)	(154.3)	(160)
War expenditure	.....	118.3	752.0	1,351.6	2,000
War appropriation (United Kingdom financing)	.....	.....	.....	.....	1,000
Special expenditure	71.9	89.1	42.9	62.9	31
Capital expenditure	5.4	7.0	3.4	3.4	4
Government-owned enterprises	58.9	42.1	18.2	1.2	1
Other charges	3.8	26.0	42.5	32.0	.....
Total expenditure	553.1	690.8	1,249.6	1,895.0	3,900
Total revenue	502.2	562.1	872.2	1,481.3	2,050
(Including tax revenue)	(435.7)	(468.3)	(778.2)	(1,360.9)	(1,945)
Over-all deficit or increase in direct net debt	50.9	118.7	377.4	413.7	1,850
Percentage of revenue to total expenditures	91	82	70	78	52
Financial assistance to United Kingdom§	.....	104	361	1,050	**

* Dominion of Canada, *Public Accounts for Fiscal Years Ending March 31, 1939–41* (Ottawa, 1942).
† Estimated (appendix to the 1942–43 budget).
‡ Budget speech, *Debates of House of Commons*, June 23, 1942.
§ *Ibid.*, and *Debates of House of Commons*, March 18, 1942.
** See above, War Appropriation (U.K. Financing) Act.

The magnitude of the Canadian financial program thus far is depicted in Table 1, which summarizes the revenue and expenditure of the Dominion from the fiscal year immediately preceding the war. As rough standards of comparison, it should be borne in mind that the population of the United States is about eleven times and the national income about fifteen times that of Canada.

The budget of June 24, 1940, made a determined attack on the tax problem. Some new taxes related to the exchange problem will be discussed later. The major tax increases fell on income and excess profits. A revised excess profits proposal discarded the earlier alternative base of return on invested capital and imposed a rate of 75 per cent on the excess of profits over the profits of a pre-war standard period. It imposed also a minimum rate of 12 per cent on business profits, which, added to the existing corporation tax of 18 per cent, meant a minimum of 30 per cent on corporation profits. A board of referees was appointed to determine standard profits in cases where businesses had been clearly depressed or nonexistent in the statutory standard period.

To reach incomes lower than had previously been taxed and to provide for some collection at the source, a National Defence Tax was imposed at the rate of 2 per cent on total incomes which exceeded $600 for single persons and $1,200 for married persons. This was deductible from all salaries, wages, and dividends at the source of payment. This tax was additional to the graduated income tax for which the exemptions were lowered from $2,000 for married and $1,000 for single persons to $1,500 and $750, respectively. The increases in rates, percentagewise, were particularly heavy on the middle incomes in the scale, ranging from 50 per cent increases in tax on incomes of $20,000 to more than 500 per cent on incomes of $3,000, both examples being for married persons without children. The successive increases in personal income tax are illustrated in Table 2. Despite these increases, however, the budget of 1940 still left in war finance a considerable impetus to expansion.

The succeeding budget of April 29, 1941, had as its background very great increases in employment, pay rolls, national income, and retail sales. The production programs which had been planned, particularly the great expansions after the fall of France, were beginning to emerge in outputs of impressive magnitude. The major regions of the country were rapidly approaching the zone of full employment. It was forecast that the national income for 1941–42 on the basis of current prices would be about 50 per cent above the pre-war level.

The government's declared policy clearly called for severe taxation. Whereas between 1939–40 and 1940–41 tax revenues had increased by $310,000,000, or 66 per cent, the minister of finance projected tax revenues for 1941–42, 70 per cent, or $541,000,000,

TABLE 2*

DOMINION AND PROVINCIAL INCOME TAXES APPLICABLE TO A RESIDENT OF ONTARIO

Income	Date of Dominion Budget	Single Person	Married Person No Dependents	Married Person Two Dependents
$ 1,000	Pre-war	.....	.....	.....
	Sept., 1939	.....	.....	.....
	June, 1940	$ 35	.....	.....
	April, 1941	88	.....	.....
	June, 1942†	172 (80)	.....	.....
$ 1,500	Pre-war	22	.....	.....
	Sept., 1939	24	.....	.....
	June, 1940	105	$ 30	$ 14
	April, 1941	218	75	35
	June, 1942†	367 (120)	217 (108)	49 (24)
$ 3,000	Pre-war	104	45	9
	Sept., 1939	117	50	10
	June, 1940	353	208	97
	April, 1941	623	400	215
	June, 1942†	1,064 (240)	884 (300)	668 (334)
$ 5,000	Pre-war	264	177	118
	Sept., 1939	300	200	134
	June, 1940	832	604	427
	April, 1941	1,333	1,000	735
	June, 1942†	2,128 (400)	1,878 (500)	1,662 (600)
$ 10,000	Pre-war	946	784	660
	Sept., 1939	1,065	882	738
	June, 1940	2,628	2,336	1,921
	April, 1941	3,600	3,080	2,710
	June, 1942†	5,112 (800)	4,762 (1,000)	4,546 (1,200)
$ 50,000‡	Pre-war	15,319	14,948	14,635
	Sept., 1939	17,667	17,232	16,643
	June, 1940	24,278	23,722	22,967
	April, 1941	28,393	26,965	26,437
	June, 1942†	35,703 (800)	34,553 (1,000)	34,337 (1,200)
$100,000‡	Pre-war	40,425	39,929	39,525
	Sept., 1939	46,212	45,654	44,974
	June, 1940	57,255	56,382	55,423
	April, 1941	64,348	61,875	61,299
	June, 1942†	81,137 (800)	78,987 (1,000)	78,771 (1,200)

* The amounts are the taxes enacted by the budget legislation of the date shown. They are ordinarily collectible on the income of the calendar year of the budget. They include the graduated income tax, the National Defence Tax, and the income tax of the province of Ontario where applicable.

† The tax under the budget of June, 1942, is the total tax *including* the refundable portion. The latter is stated separately in parentheses.

‡ Of these incomes, $30,000 is deemed to be earned income and the remainder, investment income.

above those of 1940–41. In other words, the tax revenues planned were three times as large as those of 1938–39.

Additional revenues were not easy to find. Canada already had a sales tax of 8 per cent on manufacturers' prices, and the government refused to contemplate an increase. The tax on sugar was, however, increased from 1 to 2 cents a pound, and numerous excise taxes of 20–25 per cent were imposed on nonessential goods and services—gasoline, travel, amusements, cosmetics, soft drinks, etc. These taxes fell on consumption which the government was prepared to discourage or consider as evidence of surplus income. Of $300,000,000 of new tax revenue desired, in a full fiscal year, such taxes were only to provide about $80,000,000, leaving $220,000,000 to be obtained by income and profits taxes and succession duties.

The National Defence Tax rate, imposed on total income, was increased from 2 to 5 per cent, with 7 per cent on the incomes of single persons receiving more than $1,200. The graduated income tax was again increased drastically. For married persons receiving $10,000 the tax was increased 50 per cent, and for those receiving $3,000 the rate was approximately doubled.

For the first time, Dominion succession duties were imposed in addition to those of the provinces.

WAR BORROWING

War borrowing, other than for refunding certain external issues, has been entirely internal. In addition, the domestic market has been required, since the beginning of the war, to finance the repatriation (both governmental and private) of Canadian securities from London to the extent of some $750,000,000. Borrowing from the Bank of Canada and from the chartered banks has been very limited as a matter of deliberate policy. Aside from special borrowing from the Bank of Canada of $325,000,000 (including $75,000,000 in treasury bills), as part of the operation transferring the gold and foreign-exchange holding of the Bank to the Foreign Exchange Control Board, only two small loans of $40,000,000 and $24,000,000 have been arranged with the central bank up to March 31, 1942. Because of the transfer of gold and foreign ex-

change from the Bank to the Foreign Exchange Control Board, the significance of changes in the security holdings of the Bank is not readily discernible. Its open-market operations have been sufficient, however, to raise the chartered banks' cash reserves from $259,000,000 on May 24, 1939, to $308,000,000 on May 27, 1942 (a figure slightly lower than that ruling in May, 1941), and to provide for an increase in active note circulation from $112,000,000 to $404,000,000 between the same dates.

The chartered banks, in October, 1939, provided a loan of $200,000,000. This was intended to be expansionary in effect and was facilitated by appropriate central-bank action. Half of this

TABLE 3

PUBLIC BORROWING BY DOMINION GOVERNMENT
SEPTEMBER, 1939–JUNE, 1942

	First War Loan (February, 1940)	Second War Loan (October, 1940)	Victory Loan (June, 1941)	Second Victory Loan (February, 1942)
Cash subscriptions	$200,000,000	$300,000,000	$730,000,000	$844,000,000
Conversions	$ 50,000,000	$ 25,000,000	$106,000,000	$154,000,000
Maturity (years)	8–12	12	5 and 10	2½, 6, and 12
Yield (per cent)	3.27	3.125	2.19 and 3.09	1.50, 2.25, 3.07
No. of subscribers	178,363	150,890	968,000	1,682,000

was paid off in October, 1941, and half refunded. Five-year bonds to the value of $41,000,000 were sold to the chartered banks on June 1, 1940. A further loan of $250,000,000 in January, 1941, was issued to the banks mainly to refund issues which were in part in the hands of the chartered banks. In the fiscal year 1941–42, treasury bill issues were increased by $40,000,000, most of which presumably went into the hands of the chartered banks. From April, 1939, to April, 1942, all security holdings of the Canadian chartered banks have risen only from $1,509,000,000 to $1,899,000,000.

The remaining borrowing, by which the funded debt and treasury bills of the Dominion have increased from $3,433,000,000 at August 31, 1939, to $5,866,000,000 at March 31, 1942, and direct Dominion obligations abroad have been reduced by $401,000,000,

has been entirely from the Canadian public. The most significant features of the public loans are given in Table 3.

In these results of loans there are no subscriptions by chartered banks or the Bank of Canada. They do include the sale of small-denomination bonds. The number participating in the last loan (1,682,000) includes at least 35 per cent of the gainfully occupied population. In addition, war savings certificates and stamps have been sold since May, 1940, and promoted by continuous selling activity and periodic special campaigns. Up to March 31, 1942, net sales had amounted to approximately $130,000,000, or a rate of $6,000,000 a month. The current rate is somewhat higher, and the greater part of the total comes from regular pay-roll deductions. It has been a prime object in this campaign, as in the Victory Loan campaigns, to increase the level of current savings rather than merely to sell government obligations.

FOREIGN EXCHANGE

The second theme in Canadian war finance has been that of foreign exchange.

Because of the obvious danger of a flight of capital to the United States, with resulting disruption of Canadian capital markets, the Foreign Exchange Control Board was established on September 15, 1939. The governing order prohibited the export of capital, but the board was required to provide exchange for all legitimate current transactions. The Canadian dollar was stabilized at a discount of 10 per cent on New York, a level somewhat higher than had been reached in the first days of war.

Canadian merchandise imports from the United States are geared to business activity in Canada; Canadian merchandise exports to the United States vary with business activity in the United States. When, therefore, at the beginning of 1940, the United States index of production receded while Canadian plant expansion programs grew, the pressure on the Canadian dollar increased as the drain on Canadian United States dollar assets was enlarged. In May, 1940, the Foreign Exchange Control Board took over the gold and foreign exchange held by the Bank of Canada and private holders.

The first steps taken to deal with this developing drain were hesitant. During 1940 the United Kingdom continued to meet a part of its adverse balance with Canada in gold, and the re-export of this gold to the United States tempered the urgency of the situation. Further, the government, which negotiated two trade agreements with the United States and had gone far to facilitate the United Kingdom–United States Trade Agreement, was very reluctant to impose drastic restrictions on imports from so valued a neighbor. In the budget of June, 1940, however, a war exchange tax of 10 per cent was imposed on all imports from non-Empire (in effect, nonsterling) countries. This, added to the exchange buying premium (11 per cent), made an additional war differential of 22 per cent against "hard-currency" imports. Further, a heavy excise tax graduated from 20 to 80 per cent was levied on sales of passenger automobiles. This was designed to discourage the importation not only of complete cars but of parts and materials, the condition being that the imported content was a higher proportion of the expensive than of the cheap cars.

In July, 1940, following a sharp decline in the tourist entries, an order was issued instructing the Foreign Exchange Control Board to refuse United States funds for the purposes of pleasure travel. The minister of finance has stated that savings in United States funds by this measure had been well over $100,000,000 by March 31, 1942.

In December, 1940, the situation had become so critical that special measures were introduced in Parliament. Under the War Exchange Conservation Act (1940) a wide range of imports from nonsterling countries was prohibited. These prohibited imports were almost exclusively finished consumers' goods. Certain other imports, chiefly raw materials, were subjected to import permit, and an attempt was made to reduce the imports step by step. Thus Canada had already reduced her consumption of raw silk by 50 per cent before the Japanese freezing orders were imposed. Duties against imports of cottons and artificial silk from the United Kingdom were removed for the duration of the war. By another measure heavy excise taxes (25 per cent on the manufacturer's price) were levied on sales of such consumers' durable

goods as refrigerators, washing machines, etc., with the purpose of discouraging any expansion of Canadian production to fill the place of the prohibited imports. It has been roughly estimated that by these measures United States dollars to the amount of more than $65,000,000 were saved in the twelve months ending March 31, 1942, and that imports from Great Britain were increased by from $18,000,000 to $19,000,000.

By Part III of the War Exchange Conservation Act, the government was empowered to enter into agreements with business firms to grant special depreciation allowances for income-tax purposes on new investments which would result in increased hard-currency exports. A considerable number of agreements has been made under this legislation, but, in practice, they were soon restricted to the field of essential commodities.

These measures reduced the rate at which the liquid United States dollar resources of Canada were declining. The most important contribution to the minimizing of the exchange problem, however, was made by the Hyde Park Agreement of February, 1941. By that agreement, the United States undertook to purchase from Canada war materials and equipment and to lend-lease to the United Kingdom component parts and materials obtained in the United States for fabrication in Canada on United Kingdom account. The second procedure was designed to relieve Canada of considerable payments in United States funds for war materials for which she was finally paid in sterling, but it has not in practice been very productive. The contracts of sale under the first procedure have, however, after a slow beginning, reached encouraging totals. The proceeds should go far during the present year toward reducing the exchange problem to manageable proportions. The problem has existed because Canadian purchases from the United States on Canadian and United Kingdom accounts of materials and equipment for war exceed United States war purchases from Canada by a very wide margin. The minister of finance reported in his budget speech of April 29, 1941, that the net decline of United States assets from September 15, 1939, to March 31, 1941, had been about $225,000,000, and in his budget speech of June 23, 1942, that the reduction in the gold and United

States dollar balances held by the government and the Foreign Exchange Control Board for the fiscal year ending March 31, 1942, had been about $50,000,000. The remainder of the total deficit was met by the sale of private assets in the United States, by some new investment in Canada, and by sales under the Hyde Park Agreement. The agreement is now making an important and essential contribution to Canadian war finance. On the other side, it has enabled the United States to obtain advantage from the prior development of war production in Canada.

In the light of the prospects of the Hyde Park Agreement no important measures were proposed in the budget of April 29, 1941, for more rigorous conservation of United States exchange. Substantial reductions were made in duties on imports from the United Kingdom, but these were expected to do no more than offset some of the increases in the costs of British exporters.

To the extent that Canada was losing United States exchange, disbursing her foreign assets, and increasing her net foreign liabilities, the pressure on the economy in terms of goods was lessened. The other side of the exchange picture, the sterling exchange problem, showed a reversed situation.

In peacetime, Canada had been accustomed to obtain a surplus of sterling and to sell it for United States dollars to pay for her imports and other debits on United States account. Under British exchange control, this is not possible in wartime.

In the early months of the war the United Kingdom met part of her payments in gold, but this ceased in December, 1940. The Canadian government undertook to provide all the Canadian dollars required by the United Kingdom to meet its deficit in Canada. Until recently it did this by repatriating certain Canadian dollar securities of the government and the Canadian National Railways held in London and by accumulating sterling balances. On March 18, 1942, the minister of finance reported to the House of Commons the manner in which the sterling area's cash deficiency covering the period September 15, 1939—March 31, 1942 (Table 4) had been financed. Of the portion financed by the Canadian government, about $635,000,000 represented repatriation of securities and the remainder accumulation of sterling balances.

In order to avoid the post-war prospect of an embarrassing intergovernmental debt problem and to assure the United Kingdom of freedom in purchasing its needs from Canadian output, the government proposed a financial plan which was enacted in the War Appropriation (United Kingdom Financing) Act, 1942. The arrangement was designed to regularize the past and care for the future. Existing obligations were to be met by a further repatriation of $295,000,000 of Canadian government securities and a loan of $700,000,000 free of interest for the duration of the war. For the future, a gift of food, materials, and munitions up to a value of $1,000,000,000 (the estimated deficit) was provided for the fiscal year 1942–43.

TABLE 4

ESTIMATED STERLING AREA'S CASH DEFICIENCY IN CANADIAN DOLLARS, SEPTEMBER 15, 1939—MARCH 31, 1942

Net cash deficiency	$1,870,000,000
Financed by United Kingdom through sale of gold to Canada	250,000,000
Total financed by Canada	1,620,000,000
a) By governmental financing	1,494,000,000
b) By private repatriation, gifts, etc.	126,000,000

Up to March 31, 1942, the financing of the United Kingdom deficit was outside the budget. It represented the acquisition of assets but had the same immediate effect on the Canadian economy and Canadian finances as a direct war expenditure. For 1942–43 it appears in its true light—a direct war cost assumed by the Canadian people. Not only so, but, in providing the United Kingdom with Canadian dollars, Canada is now reducing correspondingly the burden on the Exchequer and the people of the United Kingdom. In attempting to meet her deficit with the United States out of increased war production, Canada is reducing the drain on her assets but increasing the strain on her economy (see appended items in Table 1).

DOMINION-PROVINCIAL FINANCIAL RELATIONS

The third and briefest theme in Canadian war finance is that of the financial problems of a federal state. The particular prob-

lem of concern arose because of the increasing severity of income taxes. It can be illustrated by reference to the infrequent case of a man having an income of $500,000. In Ontario, the wealthiest province, such a man under the 1940 budget paid, in both Dominion and provincial income taxes, $381,000. In Alberta and Saskatchewan he would pay more than 100 per cent of his income and in British Columbia slightly less. The same inequality in lesser degree appeared in the taxes on lower incomes. The difference in rates and methods of computation between the provinces made it impossible for the Dominion to apply the most efficient and equitable rates to the whole country.

A Dominion-provincial conference, called in January, 1941, to discuss the recommendations of the Royal Commission on Dominion-Provincial Relations, broke up in disagreement, despite the contention of the minister of finance that the problem was an acute war problem.

In the budget of April, 1941, the Dominion returned to the attack, convinced that the full financial strength of the country could not be put into the war effort unless some order replaced the chaos in taxation. The minister of finance boldly framed his proposals for taxation of personal and corporate income as if the provinces were not in the field. He then made an offer to the provinces that if they would vacate the income-tax field for the duration of the war the Dominion would undertake to pay them *either* "the revenues which the province and its municipalities actually obtained from these sources during the fiscal year ending nearest to December 31, 1940, *or* the cost of the net debt service actually paid by the province" during the same fiscal year "less the revenue obtained from succession duties." In the case of some provinces, these payments would be augmented by fiscal need subsidies, but all other special grants would be discontinued. In view of the possibility that the sale of gasoline would have to be curtailed, the Dominion also undertook, for any province accepting the whole offer, to maintain provincial gasoline revenues at the 1940 levels.

The negotiations over the proposed agreements have been intricate and protracted. They reached a successful conclusion,

however, and no provincial taxes were collected on 1941 incomes. The burden of war finance has forced a fundamental, if temporary, change in Dominion-provincial financial relations.

RELATED NONFISCAL POLICIES

As the fiscal year 1941–42 passed, the three themes of Canadian war finance had merged into one. A temporary wartime solution to the acute problem of Dominion-provincial financial relations had been found. The problem of financing United Kingdom purchases had been met squarely, and the costs had been properly classified under the war appropriation. United States dollars were still scarce and were still to be husbanded. Purchases under the Hyde Park Agreement in reasonable prospect were such, however, that Canadian ability to buy essential materials and war supplies in the United States was not affected by considerations of foreign exchange. Fiscal policy now faced the simple, elementary —but difficult—problem of diverting and reserving Canadian production to war and other essential needs of the Canadian economy and the economies of the other United Nations. Though all parts of the country were not equally active, the fiscal and the general economic problems were those of full employment.

From the beginning of the war the government had set its face resolutely against inflation. It had been early recognized that finance could accomplish only part, though an essential part, of the task of marshaling economic resources for the purposes of war. It became increasingly apparent in the summer of 1941 that the country was facing real shortages of goods and of labor, equipment, and materials to make the goods. The most rapid price level increase of the war was taking place. The familiar symptoms of slow deliveries, duplicate orders, congested transport, and "shopping around" for supplies were in full evidence.

In searching for a formula on which to adjust wages in war industries in circumstances in which "cost contracts" and a 75 per cent excess profits tax had effectively removed the employer's ability to pay as a barrier to wage increases, the government had approved cost-of-living bonuses in December, 1940. Order in

Council 7440 directed boards of conciliation to recommend, in lieu of wage increases, flat cost-of-living bonuses varying with the cost-of-living index but equal for all adult workers. By the fall of 1941 the Department of Labour had reached the conclusion that this policy must either be extended or be withdrawn.

During the same period direct controls had been increasing rapidly. There had as yet been no coupon rationing of consumers, but import control, allocation of materials, appeals for voluntary curtailment of consumption of scarce products, and restricted licensing of building projects and plant installations had begun to limit consumer expenditures and private investment.

It was in this situation, as agricultural prices swung into reasonable line with other prices and after wages had had two years of wartime demand under which to adjust themselves, that the government took the bold step of imposing simultaneously a ceiling on all prices at the levels actually reached in the four weeks prior to October 11, 1941, and a ceiling on wages except those determined by a joint board to be unduly low and out of line. These two orders were quickly followed by a third which placed a ceiling on salaries.[1] The ceiling on wages was modified by the provision of flat cost-of-living bonuses, equal for all adult workers and payable if the price ceiling should be modified by a price rise of 1 per cent or more.

The adoption of these policies marked recognition by the government that an effective anti-inflationary program could not rest on conventional fiscal measures alone but, under the stresses of total war, must combine taxation, saving, investment control, price and income control, and rationing in a co-ordinated policy. Fiscal measures were not discarded, but they were not quick enough or sufficiently flexible and pervasive in application to do the whole task. Any government which attempts by a single lever to shift an economy from peacetime production to full mobilization for modern war will unquestionably fail.

[1] "P.C. 8527 of November 1, 1941," *Canada Gazette*, December 6, 1941; "P.C. 8253 of October 24, 1941," *Canada Gazette*, November 1, 1941; "P.C. 9298 of November 27, 1941," *Canada Gazette*, December 1, 1941.

THE FINANCIAL PROGRAM FOR 1942–43

The budget of June 23, 1942, is ample evidence that fiscal measures still occupy a major position in Canadian economic policy. In presenting the budget, the minister of finance estimated that total expenditures for the fiscal year 1942–43 would not be less than $3,900,000,000, of which all but $569,000,000 would be war expenditure. This compares with $2,945,000,000 (combining war expenditure and United Kingdom financing) for 1941–42 (see Table 1). To meet this his budget plans called for ordinary revenue of $2,050,000,000, an increase of $587,000,000. Of this increase, $109,000,000 is anticipated from existing rates and $378,000,000 from higher rates, new taxes, and more rapid collection. Table 5 shows, by tax sources, the wartime changes in revenues.

The budget proposed increases and extensions of "luxury" or expenditure taxes, of which the most important from a revenue standpoint were increases in taxes on spirits and beer to more than twice the pre-war level, on cigarettes to a rate of 16 cents on twenty cigarettes, and on soft drinks to a rate above 50 per cent of the manufacturers' price. In addition to other increases, a retail tax of 25 per cent was imposed on jewelry and some other non-essential commodities. These commodity taxes will, however, produce only $50,000,000 of the total increase anticipated from new and increased rates, viz., $378,000,000.

The main emphasis was placed on extending and recasting the personal income and excess profits taxes. The major changes proposed were: (*a*) collection at the source, or by compulsory instalments, of a high proportion of the personal and corporate income taxes and the excess profits taxes; (*b*) the introduction of a minimum savings requirement for individuals and corporations in the form of refundable taxes; (*c*) the allowance of certain established contractual forms of personal saving in lieu of the refundable portion of the income tax; and (*d*) a readjustment of excess profits tax rates to increase the revenue derived from it.

Under the personal income tax, the National Defence Tax and the graduated tax have been brought together so that the income tax starts from a normal rate of 7 per cent on total income. The graduated rates begin at 30 per cent on the first $500 of income in

excess of $660. Exemptions for married persons are abolished, the taxpayer being given a tax credit of $150 for a married person and $80 for each child. The weight of the new rates is sufficiently in-

TABLE 5

DOMINION GOVERNMENT TAX REVENUES BY FISCAL YEARS

(In Thousands of Dollars)

Tax Sources	1938–39	1939–40	1940–41	1941–42*	1942–43*
Income and property taxes:					
Graduated income tax	46,937	45,407	75,863	189,502	435,000†
National Defence Tax	.....	.....	27,672	106,637	
Corporation income tax	85,186	77,920	131,566	185,836	305,000
Excess profits tax	.....	.....	23,995	135,168	440,000‡
Nonresidents, etc.	9,903	11,122	13,042	28,269	28,000
Succession duties	.....	.....	.....	6,957	15,000
Total	142,026	134,449	272,138	652,369	1,223,000
Import taxes:					
Customs duties	78,751	104,301	130,757	142,391	135,000
3 per cent excise tax on imports	15,591	1,979	1,008	861	900
10 per cent war exchange tax	.....	.....	61,932	100,874	95,000
Total	94,342	106,280	193,697	244,126	230,900
Commodity and services taxes:					
Sales tax and sugar tax	136,931	153,423	196,430	268,562	233,000
Liquor and tobacco	53,119	63,460	92,867	115,816	158,255
Special expenditures taxes	7,384	8,198	20,538	77,404	83,695
Total	197,434	225,081	309,835	461,782	474,950
Other tax revenues	2,492	2,461	2,506	2,637	15,600
Total revenue from taxes	436,294	468,271	778,176	1,360,914	1,944,450

* Estimated.

† Excluding refundable portion of income tax which is expected to yield an additional $70,000,000 during fiscal year.

‡ Excluding refundable portion of excess profits tax which is expected to yield an additional $25,000,000 during fiscal year.

dicated in Table 2, which also shows the tax experience of various incomes under successive wartime budgets.

In the case of wages and salaries it is proposed to collect, from September 1, 1942, from 85 to 90 per cent of the tax by pay-roll

deductions. The employer, who has been deducting the National Defence Tax according to marital status and number of children, will be supplied with a convenient tabulation of the flat amounts to be deducted for various weekly and monthly wage and salary payment groups. The filing of an individual return will provide the basis for adjustment at the end of the year. For other types of income, quarterly instalments are to be required.

The refundable portion of the personal income tax will be one-half the tax but an amount not in excess of 8 per cent of total income of not more than $10,000 for a single person, and 10 per cent for a married person with an additional 1 per cent for each child. The maximum refundable portion is, therefore, $800 for a single person and $1,000 for a married person without dependents.

Very careful efforts have been made to provide adjustments which will mitigate the burden of such high rates under particular circumstances. Persons over sixty-five years of age are relieved from the refundable part of the tax. Abnormal medical, dental, and hospital expenses in excess of 5 per cent of total income can be deducted from taxable income. Savings under established contracts for life insurance, pension and retirement benefits, and principal payments on house mortgages are to be accepted in lieu of the refundable portion of the tax. These adjustments are recognition of the danger that, in trying to tax increased incomes sufficiently, small and moderate stable incomes may be overtaxed at the expense of savings.

These measures are a bold approach to the problem of combining voluntary and required savings. The minister stated in his budget speech that he was not proposing to replace voluntary with compulsory savings. "The refundable tax and other measures which I am recommending are merely to equalize the base from which voluntary savings start."

The excess profits tax had consisted of two alternative rates, 22 per cent of the total profits (which combined with 18 per cent corporation tax made 40 per cent for corporations) or 75 per cent of the profits in excess of the pre-war "standard" profits. The arithmetic of this tax was that corporations earning up to 157 per cent

of their standard profits paid the 40 per cent tax. Those earning more paid the 75 per cent rate. The new tax is 30 per cent for corporations on total profits, and, in addition, *either* 10 per cent of the total profits *or* 100 per cent of the excess over the standard period. The result of this somewhat complicated provision is that corporations whose profits have increased less than one-sixth from the standard period pay 40 per cent on the total; those whose profits have increased by more than one-sixth pay 30 per cent on "standard" profits *and* 100 per cent on the excess profits. Under this legislation no corporation will have, after tax, more than 70 per cent of its standard profits. Of the tax resulting from the application of the 100 per cent rate, 20 per cent is refundable. This is limited, however, to the tax on that portion of the profits to which the 100 per cent rate applies—profits more than one-sixth above standard. Both the excess profits and corporation taxes must now be paid in instalments.

These changes greatly increase the severity of the excess profits tax, particularly on those corporations whose profits are between 117 and 157 per cent of "standard." It is significant that these changes were not introduced until after a great deal of the possible wartime expansion of industry had taken place and after needs for increased working capital had been met. They must be viewed in relation to the allowances of realistic rates of amortization on investments in war plants since the early months of the war.

Of the total increase in revenue ($378,000,000), which, it is estimated, will result in 1942–43 from all tax changes, $323,000,000 will come from increased personal and business income taxes. In addition, refundable taxes collected in the remainder of 1941–42, it is estimated, will yield $95,000,000. It is significant of the changed emphasis in Dominion taxation that, while total tax revenues will have increased to more than four times the pre-war level, revenue from income and property taxes will have expanded to nearly nine times the pre-war figures (Table 5).

The realization of the present tax program will leave, it is estimated, very large requirements to be filled by individual subscriptions to war savings certificates and bonds. After making al-

lowance for reduction in government cash balances and for the anticipated investment of special government accounts and institutional and corporate funds, borrowing requirements may be as much as $1,000,000,000 to $1,200,000,000. This necessitates a still more vigorous voluntary savings program which will be aided by necessary restriction of supplies available for purchase.

The whole financial policy of the Dominion has been an attempt, first, to facilitate a desired expansion in production and national income and, second, by a combination of fiscal policy with direct control of supplies, real investment, prices, and incomes, to accomplish the necessary diversion to war production. The magnitude of the task may be more vividly realized if it is recalled that the proposed Dominion expenditures for 1942–43—$3,900,000,000—are in excess of the estimate of national income paid out to individuals in 1938.[2]

[2] *Report of the Royal Commission on Dominion-Provincial Relations* (Ottawa, 1939), Appen. 4, p. 53.

THE DETERMINATION OF INTEREST RATES

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I. INTRODUCTION

INTEREST on money is the premium obtainable on current cash over deferred cash; it measures the marginal preference for holding cash in hand over cash for deferred delivery. In nontechnical language this means simply that cash possesses a hoarding privilege. The property of cash of commanding a rate of return over cost may be described by saying that cash possesses an "economic efficiency."[2]

"The theory of interest has for a long time been a weak spot in the science of economics, and the explanation and determination of the interest rate still gives rise to more disagreements among economists than any other branch of general economic theory."[3]

In the early writings on the subject, theories of interest were of two distinct forms: (*a*) the "pure" theory, which explains the rate of interest as the price of capital, determined by the marginal productivity of capital in a technological sense on the side of demand for funds and by certain time-preference or psychological factors relating to the disposition of income at any particular time, on the side of the supply of funds; and (*b*) the "monetary" theory which runs in terms of demand for and supply of loanable funds or credit. In recent discussions these points of approach tend to be merged, with, however, more emphasis on one or the other.

II. THE "PURE" THEORY AND KEYNES'S MODIFICATION

The "pure" theory of interest, as it is called, maintains that the forces which determine the common value of the marginal

[1] The authors acknowledge substantial contributions to this paper by Wendell P. Ayres.

[2] Irving Fisher, *The Theory of Interest* (1930), pp. 158–59.

[3] G. Haberler, *Prosperity and Depression* (Geneva, 1939), p. 195.

economic efficiency of various assets, or rate of interest, are independent of the money supply. It holds that rates of return on assets change until the marginal efficiency of money, i.e., the rate of interest, falls into line or equilibrium with the common value of the marginal efficiency or marginal rate of return over cost of other assets as determined by other forces. If, for instance, the rate of return on real property should be high with respect to the interest rate, increased borrowing for construction purposes would force the interest rate upward and the return on real estate downward, until a point is reached at which it becomes a matter of indifference whether one should build another unit or accept the pure rate of interest. Such a theory is a long-range one, since the adjustments obviously require long periods of time.

J. M. Keynes has shown that the classical "pure" theory is based upon several restrictive implicit assumptions and has attempted to modify the "pure" theory to make it more realistic. According to Keynes, the classical theory requires the addition of two propositions: (1) the rate of interest depends upon the marginal efficiency of capital assets other than money, and (2) the scale of investment will not attain its equilibrium level until the point is reached at which the elasticity of output as a whole has fallen to zero, i.e., capacity production for the economy as a whole is reached.[4] As he explains the situation, "the [pure] theory requires that there should be a state of definite and constant expectation and that there should be a state of full employment," for, otherwise, prices of goods might change until the marginal efficiency of other assets fell into line with the rate of interest instead of the converse. Therefore, as Keynes also says,

> the orthodox theory is wholly inapplicable to such problems as those of unemployment and the trade cycle or indeed to any of the day-to-day problems of ordinary life. . . . . The orthodox theory of the rate of interest properly belongs to a different stage of economic assumptions and abstractions from that in which any of us are thinking today. Modern theory no longer assumes a definite and calculable future; modern theory is based on expectations.[5]

[4] J. M. Keynes, "The Theory of Interest," in *Lessons of Monetary Experience* (New York, 1937), p. 148.

[5] See, e.g., G. C. Evans, "Dynamics of Monopoly," *American Mathematical Monthly*, 1923; C. F. Roos, "A Mathematical Theory of Competition," *American*

This means, from a practical point of view, that a realistic theory of interest must take into account those factors which affect expectations, such as the supply of money.

III. THE "MONETARY" THEORY OF INTEREST

The classical "monetary" theory of interest had one of its most lucid expounders in the Swedish economist, Wicksell. He distinguished between the "money rate" or actual "market rate of interest" as influenced by the policy of the banks (and other monetary factors), on the one hand, and the "natural rate of interest" or theoretical rate, on the other. The latter, Wicksell defined as "that rate at which the demand for loan capital just equals the supply of savings."[6] He described the relationship existing between these two rates of interest as follows: "If the banks lower the market rate below this natural rate, the demand for credit will rise and exceed the available amount of savings and the supply of credit must be supplemented by bank credit *ad hoc*."[7]

Current explanations of interest rates in terms of the supply of funds and the various demands upon these funds involve both the notions of savings and income and the relations of the rate of savings to investment or investment opportunity. Unfortunately, these explanations are not econometric in nature; i.e., they are not presented in a form which permits of quantitative verification.

In recent papers J. R. Hicks and Oscar Lange maintain that the demand for funds for new investment depends not only on the

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Journal of Mathematics, 1925; Roos, "A Mathematical Theory of Price and Production Fluctuations and Economic Crises," *Journal of Political Economy*, 1930; Roos, *Dynamic Economics* (Bloomington, Ind., 1934), esp. pp. 172–75, 194, 195, and 199–203; see also the later writings of Keynes, Lundberg, Lindahl, Myrdal, Lerner, and Tintner.

[6] Knut Wicksell, *Interest and Prices* (London, 1936), translated from the German, *Geldzins und Güterpreise* (Jena, 1898).

[7] Davidson has pointed out that in a progressive economy the rate of interest which stabilizes the price level is below the rate which keeps the flow of money income constant. Writers of the schools whose analyses differentiate between these two rates of interest reserve the adjective "natural" for the rate which keeps the money flow constant.

rate of interest but also on the level of income.[8] G. Haberler in reviewing these papers suggests that it would be more correct to say that the demand for funds for new investment depends on the rate of change rather than on the level of income. This modification, however, introduces the acceleration principle into the system. A more realistic assumption is that the investment demand depends directly upon national income and inversely upon the unused or idle productive equipment and plant. Such a hypothesis describes the sudden rush of demand for investment goods which appears after recovery has proceeded for some time and yet avoids the difficulties encountered by the acceleration principle (see below, pp. 534–35, Appendix on the acceleration principle).

In so far as Haberler emphasizes the factor of expectation as a determinant of liquidity preference and the supply schedule of funds, his formulation conforms with the earlier views of C. F. Roos,[9] that, for an investment to be made, the rate of net income must *appear* to be greater than the rate of risk by an amount equal to the value at a future time of the rate of interest on riskless investment. One reason why expectation on which investment decision is made may be different from the actual expectation is that new concerns frequently underestimate the risk involved, because they do not have ready access to experience data.

James W. Angell[10] phrased his idea regarding the role of expectation in the following words:

> For the country as a whole, the relative size of idle balances of money thus varies chiefly as some function of expectation, and to a smaller and probably less elastic degree as a function of market rates of interest. . . . . The rate of interest must depend on a number of different factors; it must surely vary both with the supply of funds available for lending, and with the demand for such funds. The supply can be increased either by decreasing current consumption, drawing down idle balances of cash, or creating new money

[8] J. R. Hicks, "Mr. Keynes and the Classics: A Suggested Interpretation," *Econometrica*, 1937; and O. Lange, "The Rate of Interest and the Optimum Propensity To Consume," *Econometrica*, 1938; see also C. F. Roos, *Dynamic Economics* (1934), pp. 81–84, esp. p. 83.

[9] *Dynamic Economics*, pp. 194–95.

[10] J. W. Angell, "General Objectives of Monetary Policy, 1937," in A. D. Gayer (ed.), *The Lessons of Monetary Experience: Essays in Honor of Irving Fisher* (New York, 1937), pp. 77–79.

for the purpose. The demand for such funds varies with the rate of expectation, with the computed static income from new investment (I do not see how an intelligible account can leave no place for productivity!)[11] and again with the quantity of money. If I may indicate here merely the end results of a rather long analysis, I therefore conclude that the market rate of interest varies positively (1) with the computed static income from new investment, (2) with the current rate of expectation (but less than proportionately), and (3) relative to periods of a number of months—say the expansion phase or the contraction phase of "the business cycle"—with the quantity of money. It also varies inversely (4) relative to short periods of say a few weeks, in certain situations where solvency is under severe pressure with the quantity of money.

Dana Skinner[12] has developed several timing indexes which measure monetary pressures and usually vary with the rate of interest on high-grade corporate bonds. These indexes are combinations of items from the assets and liabilities of weekly reporting Federal Reserve member-banks. In one measure Skinner used the "ratio of selected deposits" (undefined) of reporting member-banks to the sum of bank loans and holdings of government securities to represent the ratio of supply of funds to business demand for funds. In another he presented a function of depositors' net balances (deposits *minus* loans), representing supply of funds and total-earnings assets of the weekly reporting member-banks to represent the demand. His important contribution is that from these monetary statistics he has formed indexes which trace approximately the path which interest rates have actually followed since the first World War.

One might well ask the questions: Why do simple ratios of deposit items to commercial loans and other bank assets tend to parallel long-term interest rates? What is its connection with the supply and demand curves of accepted theory? The following explanation is offered in elaboration of this point which is omitted from Skinner's analysis.

Figure 1 represents the determination of the long-term interest rate as the intersection of the market-demand schedule for funds

[11] This parenthesis is a reference to D. H. Robertson's "Notes on Mr. Keynes' General Theory of Employment," *Quarterly Journal of Economics*, November, 1936, pp. 177–88.

[12] *Seven Kinds of Inflation* (New York, 1937).

(*DD'*) and the market-supply schedule (*SS'*). Both of these schedules are complex: the supply schedule, for instance, is a composite of the schedules of private individuals and of life insurance and bank officials charged with portfolio management. The interest rate is measured on the vertical axis and amounts of funds on the horizontal axis. One factor determining the position of the curve *SS'* is (according to monetary theories of the interest rate) the quantity of money (or demand deposits). If these increase, the liquidity preference of investors is coddled; they are willing to hold more of their monetary assets in long-term bonds; and they shift their supply curve to the right. This drops the intersection

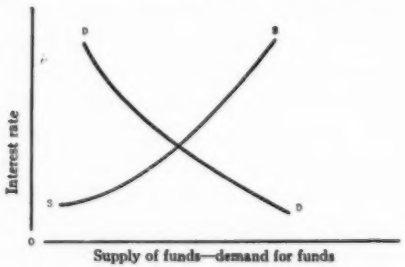


FIG. 1

point, and the interest rate falls. Figure 2 shows a curve relating the supply of funds to interest rates, obtained by the present authors by statistically eliminating the effect of demand and institutional factors from historical data on yields and bank deposits.

An important factor reflecting the business demand for funds is commercial loans. If these increase, it is plausible to assume that the business demand for funds, long-term as well as short-term, has increased: businessmen have shifted their demand schedule upward or to the left, and so interest rates rise.

If, therefore, deposits appear in the numerator of a fraction and commercial loans in the denominator, i.e.,

$$\frac{\text{Deposits} + \text{other items}}{\text{Commercial loans} + \text{other items}},$$

the ratio will reflect the movements of the demand-supply intersection point, at least as regards direction of movement. This ratio, which is similar to one used by Skinner, being a rough measure of the demand-supply intersection point, gives the direction of the interest rate; it represents an important attempt to measure something economists have long theorized about.

One can also interpret the ratio as a reflection of the demand and supply schedules of that important group of bond speculators consisting of the bank portfolio managers. When deposits

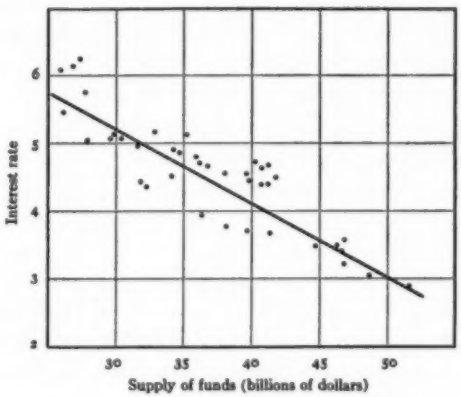


FIG. 2

pile up, the embarrassed portfolio managers shift their supply schedules to the right so as to secure more earning assets; when commercial loans increase, the banks have specially created, suitable new earning assets, and so the need of the portfolio managers for bonds diminishes. Hence, Skinner's approach is consistent with the approach of the theorist, who uses the intellectual apparatus of shifting demand and supply curves.

In summary, Skinner's analysis has resulted in monetary functions or indexes which fluctuate more or less with interest rates. It therefore is an important first step. However, it is incomplete, and it does not weigh the significance of the various factors. In

particular, the Skinner analysis employs only the data of reporting member-banks, whereas data of other banks and of insurance companies are important. It is also true that, while commercial loans may be a measure of the current business demand (or at least of how much of this demand has already been met by reporting banks), they are not sensitive measures of expectations, as are the new orders received by business as used in the present paper.

IV. STATEMENT OF THE PROBLEM

The purpose of the present paper is to investigate quantitatively the relative importance of various factors influencing long-term interest rates and by means of relationships thus uncovered to test various theories of interest rates. Specifically, the purpose is to "explain" the yields on Aaa corporate bonds (Moody's) and long-term United States government bonds.

As in the authors' paper on the demand for passenger automobiles, the understanding on which they proceed is that an economic factor is "explained" when a measure of it is connected by a definite rule or formula, mathematical or nonmathematical, with measures of other factors, at least formally independent of the estimand.[13] This requirement is less exacting than that for an explanation in the natural sciences where, according to Professor Bridgman, "the essence of an explanation consists in reducing a situation to elements with which we are so familiar that we accept them as a matter of course, and our curiosity rests."[14] The explanatory factors used in economics may be familiar but are hardly resting-points for curiosity.

From a logical standpoint explanations of interest rates in terms of factors other than those used in this paper would be quite acceptable. For example, one might attempt to explain interest rates in terms of such factors as income, income distribution, cost of living, etc. But whether significant relationships can

[13] *The Dynamics of Automobile Demand* (New York: General Motors Corp., 1938). See also Roos and von Szeliski, "The Concept of Demand and Price Elasticity—the Dynamics of Automobile Demand," *Journal of the American Statistical Association*, December, 1939, pp. 652–66.

[14] P. W. Bridgman, *The Logic of Modern Physics* (New York, 1928), p. 37.

be developed between *measures* of these factors and *measures* of interest rates is, of course, another matter.

In the present study it is shown that a close relationship or connection exists between high-grade or Aaa corporate-bond yields and certain monetary items measuring the supply of and demand for money. As the customary phrase "supply of money" has a meaning not quite appropriate for this paper, the phrase "supply of liquidity-assets" will be used hereafter. Specifically, an index of such yields is related to a composite of the supply of funds or bank deposits, and security loans, bank investments, demand for commercial loans as measured by new orders and business working capital, and other items. The resulting correlation adequately explains all major changes in yields which have occurred since 1919, the first year for which all these data are available. The paper also explains government-bond yields in terms of Aaa yields and government-bond supply factors, and taxes.

V. AN EXPLANATION OF HIGH-GRADE BOND YIELDS

The high-grade bond-yield criterion shown on Chart I along with Moody's index of Aaa corporate-bond yields was calculated from the formula (see Appendix):

$$\begin{aligned}\text{Logarithm of yield} = {} & -0.00628 \times \text{Liquidity-assets (in billions)} \\ & +0.304\,\frac{\text{Government securities held by banks}}{\text{Supply of liquidity-assets}} \\ & +0.632\,\frac{\text{Demand for commercial loans}}{\text{Supply of liquidity-assets}} \\ & +0.449\,\frac{\text{Security loans of commercial banks}}{\text{Supply of liquidity-assets}} \\ & +0.00153\,(\text{Bills discounted} - .42 \times \text{Excess reserves}) \\ & + \text{Time trend.}\end{aligned}$$

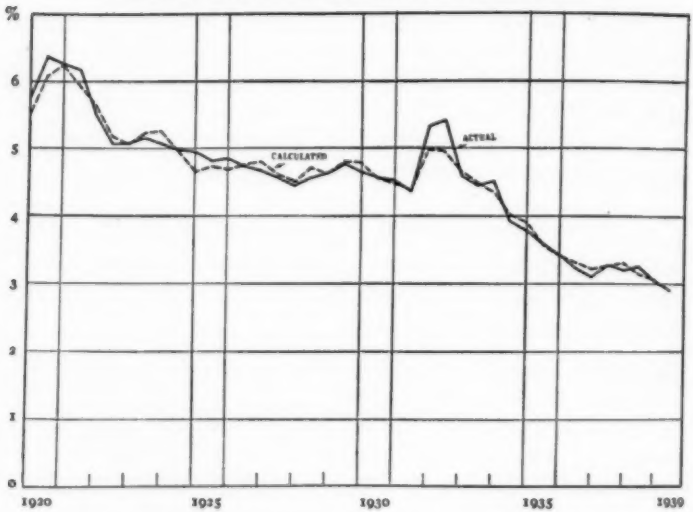
Each dollar of excess reserves is counted as a negative 0.42 bills discounted. It will be observed that the fit of the calculated yield to the actual yield shown on Chart I is close.

VI. SOME DEFINITIONS

While economic literature abounds with references to *the interest rate*, no particular interest rate can be identified as *the rate*. In writings on the subject it is often implicitly assumed that obligations do not bear a maturity date. But in practice the maturity date is very important. The yield on the federal government's securities is usually different for different maturities; today a five-

CHART I

ACTUAL AND CALCULATED MOODY'S AAA BOND YIELDS



year note may yield only 1 per cent and a twenty-year bond 2–2½ per cent. Thus, in practice, at least, the interest rate is a function of the time remaining to maturity, i.e., the length of time over which the investor risks changes in the interest rate. But, historically, short-term rates have often exceeded long-term rates, even in cases where the risk was equal, aside from that interposed by the time element. In such instances the long-term rate reflected the expectations of the market, even though such rates did not turn out to be accurate measures of later realized short-term

rates of interest.[15] The interest rate for corporate bonds is taken in this study to mean the yield shown by Moody's index of Aaa bonds.

The yield on a high-grade corporate bond will usually differ substantially from the yield on a federal or municipal bond of the same maturity date. The differentials arise as a result of the peculiar properties of the government bond in the institutional setting. A yield differential between Aaa and government bonds reflects in part the difference of risk; moreover, it appears to depend in substantial measure upon the income-tax-exemption privileges of the bond and the rates of corporate and individual taxation.

In explanation of the effect of taxes one can, of course, say that the rate of taxation serves to cut down the proportion of income saved and hence to reduce the supply of investible funds. While this may be true, it would serve to explain the Aaa yield rather than the difference in yield between tax-free and taxable bonds. The present paper shows that the yield differential is proportionate to a composite of the corporate and individual tax rates.

The difference in yields between corporate and government bonds can be further explained in terms of the changes in the separate demand for each, as well as in terms of the relative supply of the two types of obligations available—and this is a further object of the present paper.

For the studies presented herein the interest rate on government bonds is taken to mean the yield on Treasury issues not callable or maturing in less than twelve years. The analysis can, however, by obvious modification be made to apply equally well to government bonds of any other maturity date or to municipal or public utility bonds. It can also be made to apply to grades other than high-grade corporate bonds. In fact, the authors have already presented such studies.[16]

[15] See F. R. Macauley, *Bond Yields, Interest Rates and Stock Prices* (New York, 1938).

[16] See "Analysis of Municipal, Utility, Railroad and Baa Yields" in *Economic Measures* (New York: Institute of Applied Econometrics, 1941).

VII. LIQUIDITY-ASSETS

It is a commonplace that money has two functions, as a medium of exchange and as a store of value. The two definitions have to be kept distinct, because many assets which are not mediums of exchange are stores of value, and in any problem it is necessary to delineate the concept of money sharply as a guide to what items shall be included in its statistical measure.

The essential characteristic of money for the interest-rate problem is not the property of facilitating trade but the property of satisfying the liquidity craving of institutional and private investors. Many things not ordinarily considered to be money have this property, and we shall call them "liquidity-assets."[17] A liquidity-asset is any asset which tends to satisfy liquidity craving; i.e., decreases liquidity preference. Liquidity-assets include many different kinds of assets having the common property of tending to shift the supply schedule of Figure 1 to the right. The question of what items to include is, of course, open to some debate. But study shows that results differ little whether one includes or excludes the really debatable items.

After careful consideration the authors have taken the liquidity-assets that directly affect bond yields to mean the sum of the following: (1) adjusted demand deposits of all member-banks, including government deposits, (2) time deposits of all member-banks, (3) interbank deposits of all member-banks, (4) nonmember and other Federal Reserve accounts, (5) the capital account of all member-banks, (6) 10 per cent of government obligations maturing in a year, less (7) amounts due from member-banks, and (8) less required reserves. This is taken as approximating, or at least paralleling, the total liquidity-assets held by those who own or might acquire Aaa corporate or other high-grade bonds. Required reserves are liquid assets of banks, but legal requirements cause them to work "in reverse." When these assets increase, other things being equal, banks are less free to purchase bonds.

It is necessary to include the capital account of banks, because

[17] The phrase "liquid assets" comes near to expressing what is meant, but it has the disadvantage that it has already acquired specialized meanings in banking and investment management.

a bank's bond policy is in part dictated by the status of its capital liabilities, and also to offset fluctuations in deposits which occur when depositors subscribe for bank stock or receive dividends. A double action follows purchase of bank stock by depositors: the short-term liability of the bank is decreased, and so the bank is in a position to purchase long-term bonds more freely; on the other hand, the depositors have sacrificed liquidity, and, other things being equal, they will withdraw their supply schedule somewhat to the left.

Short-term government obligations should affect liquidity preference in much the same way as deposits. This item was assigned a 0.1 weight because (*a*) the liquidity-satisfying property of Treasury bills cannot be considered as fully equal to that of deposits and (*b*) only the Treasury bills in the hands of the public should be included. While there are no data on (*b*), it is believed that they represent only a small portion—perhaps 10 per cent—of the total short-term government obligations outstanding.

VIII. DEMAND FACTORS

In some theories of long-term interest rates the business demand for capital is the only demand factor which is supposed to have a major influence on rates. But in reality, at any time there are various demands for money at work. They do not operate in watertight compartments, and the long-term interest rate can be satisfactorily explained only in terms of their interplay. These other demands for money can be classified as (*a*) the business and trade demand for short-term loans, (*b*) the banks' demand, (*c*) the security market's demand, and (*d*) the government's demand.

a) ***The business and trade demand for funds.***—Business is here taken to include all types of nongovernmental activity: consumers' goods and consumers' durable goods, services, capital goods, and raw and semifinished materials. New-orders indexes are now available, showing the effective demand in these fields. An important property of these new-orders indexes is that they measure expected national income and, derivatively, expected consumer expenditures for goods and services and instalment credit to be outstanding.

The need of business for long-term and short-term funds is constantly changing, yet this need is not always translated into an actual demand to borrow from the money supply. Many businesses in recent years have had substantial holdings of surplus cash, which originated in part in previous government spending. As the needs of business fluctuated, these surplus funds have been merely utilized to a greater or lesser degree with higher or lower velocity. Only at such times as it was necessary for business to seek funds from without its own balances did this demand have direct influence upon interest rates through conversion of idle reserves into business loans.

In consistency with this view it can be shown that commercial loans of member-banks can be represented as a function of previous business orders received and previous demand deposits, the latter factor having a negative coefficient:

$$\begin{aligned}\text{Commercial plus real estate loans at time } t+n \\ = 0.0291\begin{pmatrix}\text{Consumers' goods}\\ \text{new orders at}\\ \text{time } t\end{pmatrix} + 0.01542\begin{pmatrix}\text{Capital goods}\\ \text{new orders}\\ \text{at time } t\end{pmatrix} \\ - 0.0088\begin{pmatrix}\text{Demand deposits}\\ \text{at time } t\end{pmatrix} + 0.837\begin{pmatrix}\text{Commercial}\\ \text{loans at}\\ \text{time } t\end{pmatrix} \\ + 1.0\begin{pmatrix}\text{Real estate and commercial loans of}\\ \text{nonreporting member-banks}\end{pmatrix} + \text{Time trend}\end{aligned} \qquad (1)$$

In recent years the government has spent much money which later has found lodgment in the deposit accounts of private businesses. This has been an important factor tending to keep down the demand for commercial loans, as is shown by the negative coefficient of the second term of the right-hand side of equation (1). The index shown on Chart II is a measure of this effective demand by business for short-term and long-term funds, but principally of the former, as calculated from the above formula.

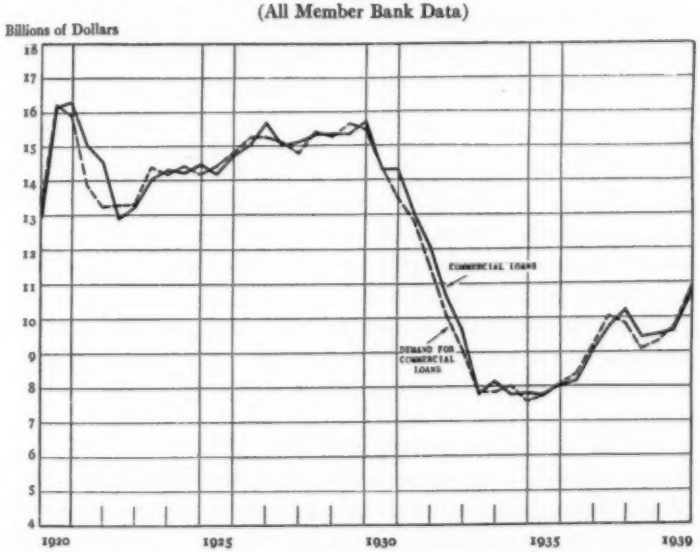
Since only good-quality loans can be made directly with the banking system, the business demand for loans must be regarded as correlated with the demand for long-term Aaa capital. Moreover, as has been brought out earlier, commercial loans, which offer an alternative outlet for the important marginal funds han-

dled by bank portfolio managers, must affect the supply of funds available for investment in long-term securities.

Many other demands for loans where the risk element is more significant are deliberately not included here. Such demands do not immediately or directly influence the rate on better-grade, long- and short-term loans; only to the extent that such demands

CHART II

THE DEMAND FOR COMMERCIAL PLUS REAL ESTATE LOANS
(All Member Bank Data)



absorb funds which would otherwise be available for other purposes do they influence the interest rate on better-quality obligations. In fact, the interest rate prevailing on obligations of secondary quality can be explained as deviations from the interest rate on the highest-quality loans in terms of factors measuring the risk element. Studies which bear out this point have been made.[18]

b) The banks' demand for funds.—Prior to 1932–33 the banks' demand for money was represented by bills discounted with the

[18] "Second Grade Bond Prices," in *Economic Measures.*

Federal Reserve banks. But since 1933 banks have held excess reserves. Excess reserves are themselves the result of many factors, such as international capital movements and trade balances, governmental fiscal policy, and Federal Reserve action. Therefore, it is beyond the scope of this paper to explain why excess reserves change, except in so far as these changes are brought about by changes in bank loans and investments.

Bills discounted and excess reserves are combined in the formula, $1.00 of excess reserves being counted as $0.42 of negative discounts. The $0.42 weight was determined by graphical correlation methods. An explanation for the weight's being less than 1 is that the urge to "get out of debt to the federal" is stronger than the urge to convert excess reserves into earnings assets by buying governments.

c) *The security-market demand for funds.*—The security market's demand for funds only roughly parallels the business demand for funds and over the short term does not fluctuate so much. It also depends upon security underwritings, refunding operations, speculative holdings of securities, and collateral loans for business and personal use. To the extent that this demand becomes effective it is directly measurable by the banks' security loans, which have not changed greatly except over long periods of time.

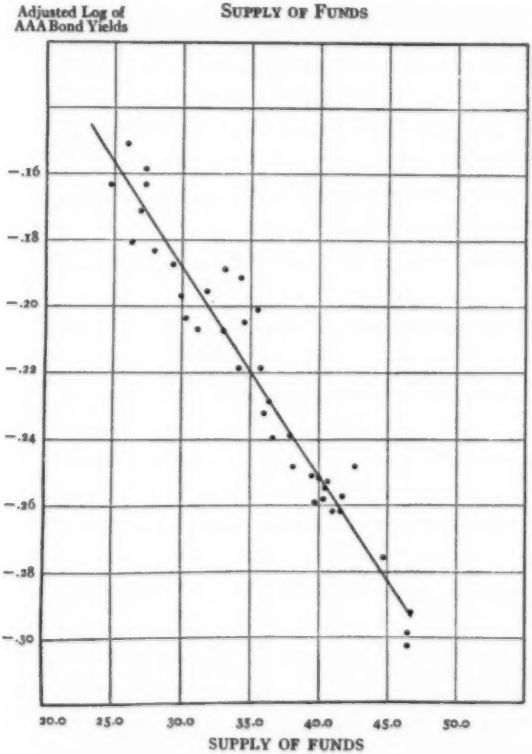
d) *The government demand for funds.*—The government demand for funds is, of course, a function of the budget unbalance. When government funds are obtained from the money supply by the transfer of bank balances from individuals to the Treasury in exchange for government obligations, the available money supply is only temporarily reduced. These augmented Treasury balances are being constantly returned to the money supply, as the Treasury makes disbursements to various individuals, etc., in payment of goods and services.

When the government demand for funds is met through the sale of Treasury obligations to the banks, a reduction occurs in the banking system's surplus funds, which might otherwise be used to meet the demand for funds by business, finance, and other sources. Such government demand, therefore, directly affects one of the

determinants of Aaa interest rates—the supply of funds for business purposes. Bank holdings of government obligations have, therefore, been used in the analysis to measure that part of the government demand for funds which influences Aaa interest rates.

CHART III

SUPPLY OF FUNDS



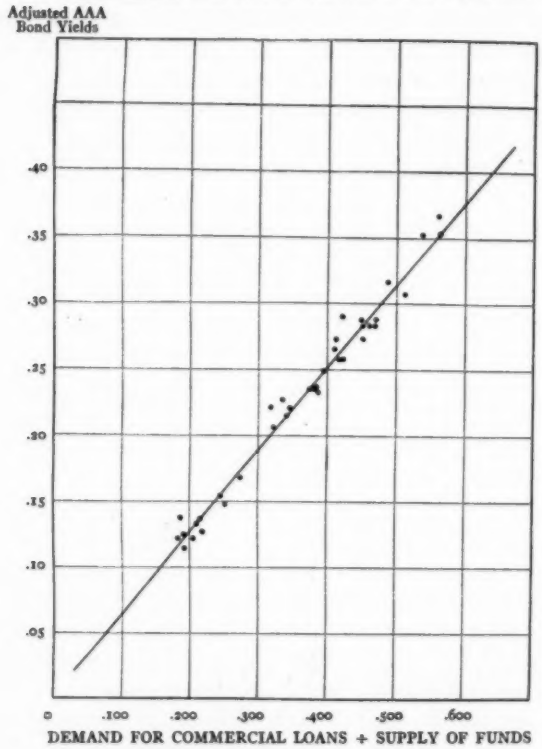
The three demand items—expected commercial loans, security loans, and holdings of governments—appear in the interest-rate formula divided by liquidity-assets. The money supply is, in the main, bank liabilities, and therefore the ratios show the fractions in substantially the ratios in which bank deposit and capital liabilities are invested.

IX. FACTOR CONTRIBUTIONS

These factors have been used in a multiple correlation by means of the formula previously described. The contributions of these several factors to the logarithm of the yield on Moody's Aaa

CHART IV

COMMERCIAL LOANS, SUPPLY OF FUNDS AND BOND YIELDS



bonds are shown in the various charts. Chart III shows the independent effect of the supply of funds on the logarithm of yields; it shows how log yields corrected for the effects of other factors vary with the supply of funds. The largest deviations, in 1924 and in 1931 and 1932, can probably be traced to international capital

movements, which threatened to reduce our money supply and which in the formulation presented have been ignored except in so far as they showed up in the money supply itself or in bank loans and investments.

CHART V

GOVERNMENT SECURITIES AND THE SUPPLY OF FUNDS

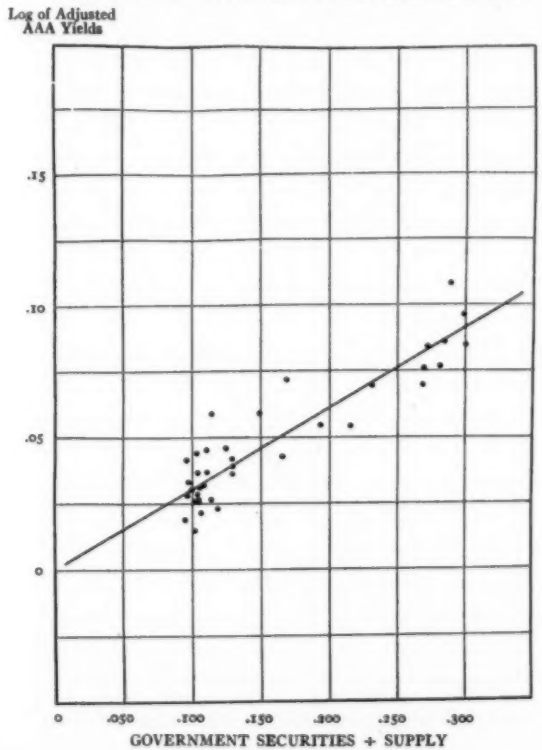
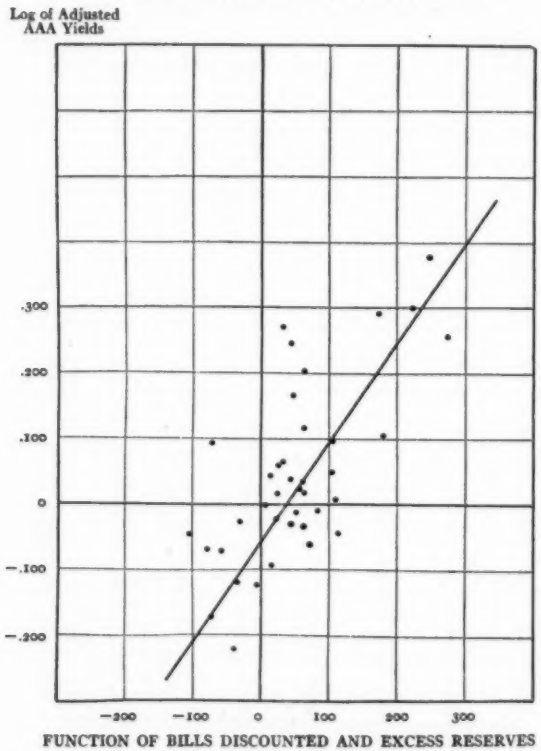


Chart IV shows how yields have varied with the ratio of the demand for loans to the supply of liquidity-assets. Note the closeness of fit between the observed points and the average line of regression. The fact that this ratio accounts for so much of the variation in yields is not at all surprising when one realizes that

the numerator represents a factor which has certainly shifted a great deal during the last twenty years. But, of course, this ratio is not sufficient to explain yields. Especially important also dur-

CHART VI

BILLS DISCOUNTED AND EXCESS RESERVES



ing the thirties has been the government demand for funds as represented by the banks' holdings of government bonds. The independent effect of this factor is shown in Chart V.

In the twenties bills discounted represented the bank's demand

for funds,[19] and in the thirties this factor had become "excess reserves." The independent effect of this complex factor is shown on

CHART VII

SECURITY LOANS AND THE SUPPLY OF FUNDS

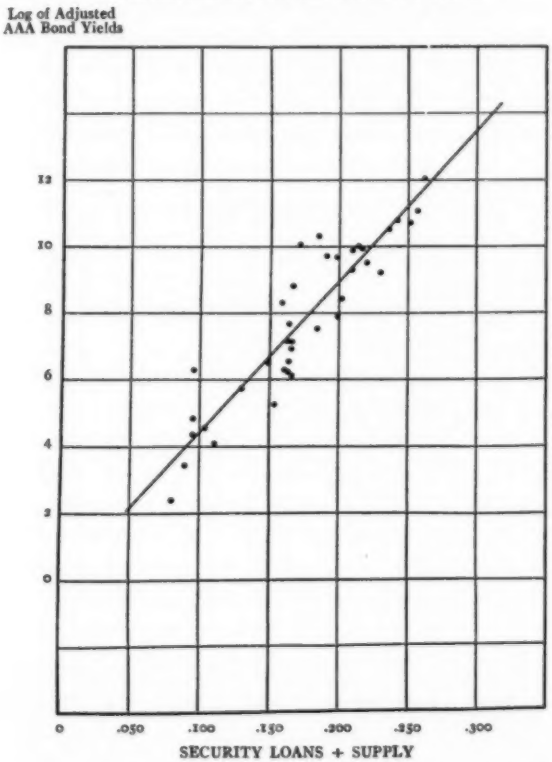


Chart VI. While the scatter shows a definite relationship, it is by no means as sharp as that shown for the loan ratio.

Security loans at times have also had important effects on interest rates. The independent influence of this factor is shown on

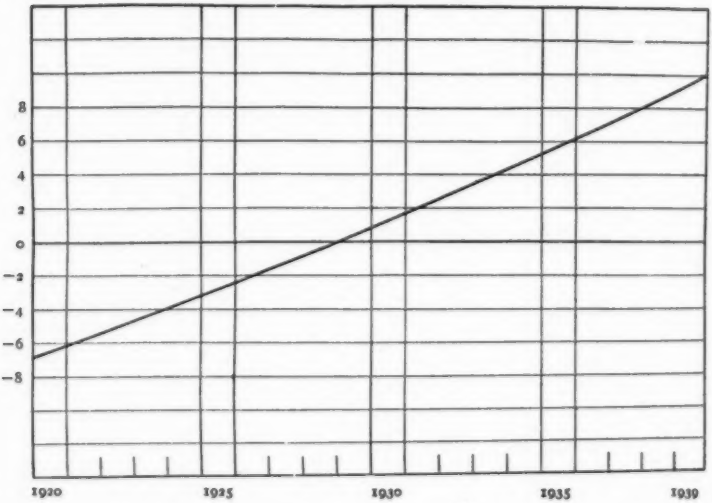
[19] Reserve-bank and member-bank holdings of government bonds also reflect in some degree the member-banks' demand for funds. In the twenties, when the

Chart VII. Note again the closeness of fit. The time trend used is slight and is shown on Chart VIII.

The composite of these factors *plus* the time trend and a constant is the line "Bond Price Criterion" on Chart I. That the formula is something more than one of those transitory and accidental covariations which the statistical manipulation of time

CHART VIII

TIME TREND—AAA YIELD CRITERION



series too often produces is indicated by the persistence of this relationship, since it was originally worked out in mid-1938. An example of how it has served as a guide to investment policy since 1938 is given below.

On the outbreak of the war in September, 1939, investors threw Aaa bonds overboard in panic. This action drove prices down to

Federal Reserve bought bonds, the member-banks sold bonds and paid off rediscounts. But this shifting from one category to another did not wholly balance. Hence, although there is some inverse correlation between bills discounted and member-banks' holdings of government bonds, it is not sufficiently high for one to obtain satisfactory results by using one measure alone.

a yield of 3.25 per cent late in September, whereas the above equation indicated a yield of 2.99 per cent. Thus a favorable buying opportunity was presented. Through much of 1940 the formula indicated lower yields despite wartime conditions, and by the end of the year yields reached the all-time low of 2.70 per cent. During the same period other modes of explanation of the interest rate—in terms of uncertainty because of the war, higher risks, reckless federal deficit financing, tinkering with the currency, the cost of living, and so on—failed to account for the course of bond prices that was actually experienced.

X. SIGNIFICANCE OF THE CORRELATIONS

The correlations presented indicate that the Aaa yields experienced during the last twenty years were in substantial measure due not only to the business demand for short-term and long-term funds but also in considerable part to monetary factors, such as bank deposits, security loans, government securities outstanding, etc. The correlations tell heavily against the "pure" theory; the only connection used between interest rates and the physical productivity of capital is the roundabout relation between new orders and loans. On the other hand, the correlations lend considerable support to the monetary theories; and they seem to show that it is within the power of monetary legislation and monetary authorities to control long-term interest rates with a close approach to exactitude.

The formula depends mostly on banking figures and reflects, therefore, mostly the shifts in the supply curves of bank portfolio committees. The supply curves of private investors may or may not shift in the same way, and the position of these curves must depend on some factors not included in this analysis. If other data were available relating to the position of private investors, they could be introduced into the formulation with presumably a further reduction in the small unexplained variation. The residual deviations between actual and calculated yields show that other factors are at work. However, the agreement of actual and calculated yields indicates that the major factors influencing

interest rates in the United States since 1919 or satisfactory proxies for omitted factors have been included in the formula.

While the authors have not experimented with other indexes of corporate-bond prices, on the basis of careful inspection of price graphs they doubt whether these other yield series correlate as closely with monetary factors as does Moody's, which is a carefully prepared index.

XI. SIGNIFICANCE FOR BUSINESS-CYCLE ANALYSIS OF CYCLICAL MOVEMENTS IN INTEREST RATES

The correlations necessarily show that the monetary thesis summarized by Angell because of its broad scope contains important elements of a verifiable theory. But they also show that Angell's qualification 3 need not be made; contrariwise, money supply or, more generally, liquidity-assets is a factor continuously at work with the same weight in different phases of the cycle. The apparent noneffectiveness of money supply at the turning-points of the cycle found by Angell can be traced to hoarding and dishoarding (which can be measured by the trade velocity of deposits). The facts are that at turning-points of the business cycle changes in trade velocity of deposits occur which are sufficiently sharp to obscure the effects of changes in the money supply.

The theory presented here takes into account changes in the money supply due to changes in loans or purchases by banks of government or other securities. Moreover, the introduction of expectations as measured directly by new orders for goods received by manufacturers is a tacit recognition of Keynes's observation that the rate of interest depends upon the marginal efficiency of capital assets other than money.

Irving Fisher[20] has shown that changes in interest rates are related to changes in the price level. He has exhibited a correlation extending over many years, which supports this view and which is consistent with the results of this paper. Prices increase noticeably at two stages of the business cycle: (1) they increase during the first three to six months of the general upturn, when businessmen change their expectations sufficiently to increase orders and

[20] *Op. cit.*

hold larger inventories; (2) they increase sharply when production approaches productive capacity and difficulties are encountered in getting deliveries. At capacity production, the marginal profitability of assets increases. Later, when the boom is completed, new orders decrease sharply, and then prices collapse. The downturn in new orders and prices then continues until the excesses due to the inventory speculation are completed.

Since changes in new orders precede changes in prices, it is not necessary to introduce the price level into the explanation. We wish to emphasize that price (or cost of living) is not a cause of the increased interest rate, but that, like the interest rate, it is a reflection of a prior shift in the demand for goods.

The positive sign of the new-orders, or demand for commercial-loan, term in the equation bears on Keynes's second observation that the scale of investment will not attain its equilibrium level until the point is reached at which the elasticity of supply of output is zero, i.e., capacity production. In other words, at the top of the business cycle, when the elasticity of supply of output as a whole is zero and the interest rate according to the pure theory ought to be in equilibrium, speculation results because of the inability of some merchants to get deliveries, and hence equilibrium cannot be maintained. As inventory-building develops and enlarged orders are placed, heavy borrowing to produce the increased orders and also in expectation of inventory profits puts in its appearance. At such points the rate of change or time increment of real income becomes almost zero, at least for a few months (until capacity can be increased), and this situation is finally realized by distributors and manufacturers. Then ensues a liquidation of these inventories and loans. This change in expectations produces a sharp decline in the demand for investment funds. Since the equilibrium point is thus extremely unstable, only a dynamic theory of equilibrium has any practical significance in explaining interest rates.

XII. EXPLANATION OF GOVERNMENT-BOND YIELDS

The preceding studies of the yields of high-grade corporate bonds provide a convenient starting-point for an approach to the

problem of explaining the changes in the value of the interest rate on government obligations.

The Treasury issues of the United States government are generally accepted as the nearest thing to a riskless obligation that can be obtained, as far as the safety of principal and interest payments are concerned. Another peculiarity of these bonds is that, although subject to surtaxes, they have been exempted in the past from normal income taxes and all state taxes. But previous attempts to explain the difference between the yields of government and other high-grade obligations in terms of the effect of tax exemption alone have not been satisfactory. This is because one should expect to find that tax exemption *plus* measures of the factors of supply and demand applying specifically to government obligations would explain the movement of interest rates on Treasury issues relative to the ratios on Aaa corporate bonds.

There are examples too numerous to cite which have shown that, when the supply of a particular commodity increased at the same time that other conditions remained unchanged, a drop in the price occurred. In the case of government obligations the total supply of the bonds is a known determinable quantity. But a modification must be made. Those government bonds held by the government or its agencies or other regulatory bodies (e.g., in trust funds) must be considered as unavailable to the individual corporate or banking investor. Hence the quantity of government issues bearing on the course of yields is that portion of all government obligations not in trust funds.

Chart IX shows that, as the supply of governments has increased or decreased over the last twenty years, the yields of long-term government bonds (expressed as deviations from the Aaa yield criterion) have moved in roughly the same direction. Prices have fluctuated in inverse proportion to the supply, i.e.,

$$\left.\begin{aligned}\text{Government bond yields} = {} & \text{Calculated Aaa yields} \\ & + F(\text{Supply of governments}) \\ & + \text{Effects of other factors}\end{aligned}\right\} \quad (2)$$

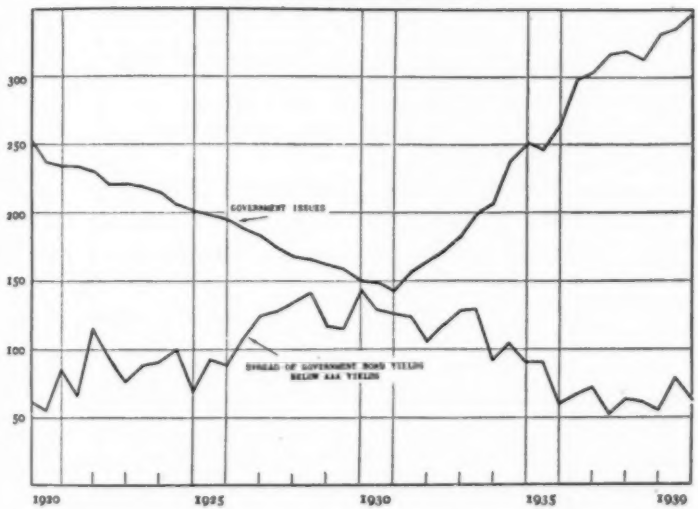
This relationship can hardly be described as accidental. Rather it is a special case of the operation of the law of supply and de-

mand, where the volume of government issues represents the supply. Like many other supply functions, the function $F(x)$ has a lower asymptote; i.e., the curve of the function becomes tangent to a line parallel to the x-axis.

Although the effect of demand for bonds as a group upon the yields of government-bond prices may be fairly well measured by the formula combining the corporate Aaa factors and the supply

CHART IX

EFFECT OF SUPPLY OF GOVERNMENT ISSUES UPON GOVERNMENT BOND YIELDS



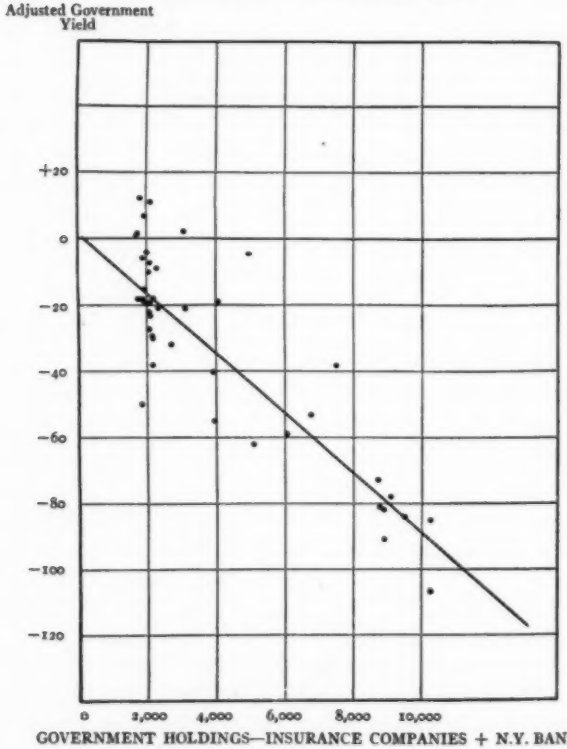
of government bonds, it cannot be measured completely in this manner. There are specific sources of demand primarily for governments. It is, however, not necessary to measure the specific demand directly. An analogy with commodity prices indicates that the distribution of the outstanding governments probably indirectly measures the demand itself.

When supplies of commodities are being acquired by the users of a commodity, the commodity is said to be going into "strong hands." This change in character of holdings is indicated by the

distribution of the supply at any moment, as between users, speculators, and producers. Again, when common stocks are being acquired by certain long-term holders, they are said to be going into "strong hands." In both cases one should expect price to be

CHART X

DISTRIBUTION OF GOVERNMENT BONDS



favorably affected by a decrease in the floating or market supply. In the case of bonds the quantity held by certain institutions is a direct measurement of the investment demand for the bonds.

In Chart X the holdings of government issues by insurance companies and New York banks (horizontal scale) are plotted

against the adjusted yields of long-term government bonds (vertical scale). These yields have been corrected for the influence of the other factors mentioned elsewhere in this paper (see formulas [1] and [2]). The chart shows that, as the holdings of these institutions increase, the adjusted yield declines, i.e., prices rise.

Insurance companies are relatively "strong hands" because (1) they are, as a group, large purchasers, and they buy to hold to maturity; and (2) they believe they are relatively well informed. New York banks are also included because they measure the sentiment in the New York market, and it is the New York market that is most influential in determining interest rates. Thus together the holdings of these two groups of institutions are a measure of the quality of the demand for governments and indirectly a measure of the demand itself, that is, a measure of the location of the demand schedule for governments.

XIII. GOVERNMENT-BOND YIELD INDEXES

The general factors which were found to have a close and perhaps a causal relationship with government-bond yields have been described. The next problem is to test the theory. A difficulty arises because there exists no fully satisfactory series of the true yield on long-term government bonds with which to test the hypothesis presented.

A series of the average yield of all long-term Treasury issues not callable or maturing in less than twelve years is published by the Federal Reserve Board and is available for a number of years. But there are several objections to using these data as representative of government-bond yields. First, the issues included in this classification have repeatedly changed over the last twenty years; and each time an issue was introduced into or dropped from the group, the average yield changed. Second, the yield average is at any moment the yield of a group of bonds of a certain average maturity. When the issues included are changed, immediately the average maturity is changed. Even during the periods when the list of bonds included in the average remains constant, the average maturity is daily being reduced.

Therefore, if a published series on government-bond yields were

used to test a theory of interest rates, adjustments would have to be made to reduce the series to constant maturity. An alternative method would be to compute these adjustments and, instead of eliminating them from the published yield series, include them with the other factors in the analysis and solve for the several effects simultaneously. This has been done in the present study.

The change in the average yield due to the change in maturity was computed by taking the difference in the yield before and after the change was made and on the day that the change was made. These changes in terms of the yield were then cumulated to obtain a time series. To allow for the daily lowering of the average maturity of a constant group of issues, another adjustment was made. The rationale of the procedure follows: If all government obligations from bills to bonds were yielding the same return, a change in the maturity of long-term bonds in time should have no effect upon the yield of such bonds. Where there is a difference in the yields of short- and long-term government obligations, the yield of the longer-term bonds should approach the yield on short-term obligations as maturity approaches.

Suppose that at a particular time t_0 the yield on the long-term bonds is $I(t_0)$ and that they mature at time $t_0 + m$; that the yield on a bill is $i(t)$; that, as maturity approaches, the two yields approach in proportion[21] to the elapsed time. Then at time $t_0 + \Delta t$ the long-term yield I, other things being equal, will be

$$I(t_0+\Delta t) = I(t_0) - \frac{\Delta t}{m}\left(I_0 - i_0\right),$$

and in general the yield at time t will be

$$I(t) = \text{Constant} - \frac{I_0 - i_0}{m}\int_0^t t\,dt.$$

A more general hypothesis is that, within the range of maturities associated with long-term bonds, the approach-to-maturity slope

[21] The proportionality hypothesis is not fully justified but is reasonably accurate. Note that the charts in the Treasury *Bulletin* showing yield as a function of maturity date show a curvilinear relationship. The best way to get a yield series based on a constant time interval to maturity would be to calculate the ordinates at, say, twenty-five years, by months, from yield-maturity curves of this type.

is not $I - i_0/m$, but $k(I - i_0)$, where k may or may not be $1/m$. The coefficient k might be, for instance, the slope at some point of the yield-maturity curves shown in the Treasury Bulletins. The formula

$$I(t) = \text{Constant} - k(I_0 - i_0) \int_0^t t\,dt$$

can be applied by cumulating the spread between long- and short-term yields. This gives a time series which can be introduced into the analysis, and the value of k can be found by least squares.

The factors mentioned above were incorporated into a formula which gives the spread between the yields of long-term government bonds and high-grade corporate bonds. The formula may also be written in terms of the actual government-bond yields themselves by introducing yields of high-grade corporate bonds (Moody's Aaa's) as an additional variable. Likewise, one may substitute for the Aaa yields the equivalent measure made up of the factors influencing the yields of high-grade corporate bonds mentioned above. The formula is as follows:

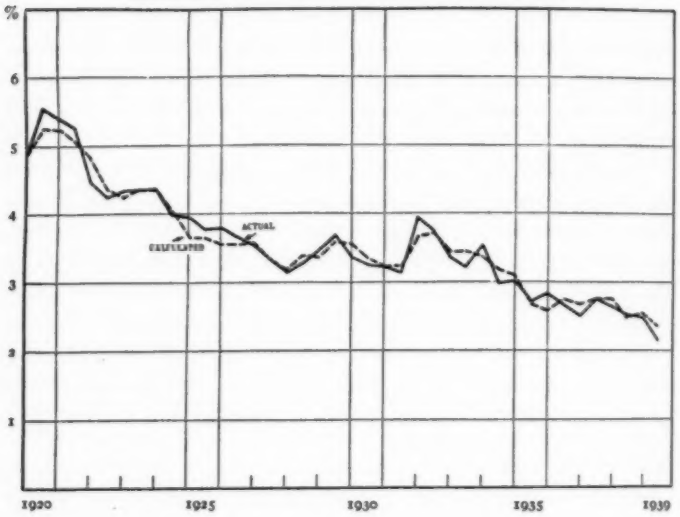
Log yield = f(Aaa criterion)
+ f(Supply of government securities in hands of public)
+ f(Holdings of governments by insurance companies and New York banks)
+ f(Spread between the yields of long- and short-term governments)
+ f(Corporate and individual rax tate)
+ Change in yield average due to change in issues included
+ Constant,

where $f(x)$ means a "function of x." On Chart XI are shown the June and December values of the actual and calculated long-term government-bond yields, from December, 1919, to June, 1939. In spite of the tremendous changes which have taken place in government finances and policy as well as in the operation of the various financial institutions, the goodness of fit between the two series is satisfactory. The econometric relationships here devel-

oped seem to provide a useful basis for analyzing bond-market conditions and even an effective tool for national monetary policies.

CHART XI

ACTUAL AND CALCULATED GOVERNMENT BOND YIELDS



XIV. CONCLUSION

These studies show that the really important factors affecting interest rates are (*a*) the money supply or liquidity-assets supply, which is largely demand deposits, (*b*) the business demand for funds as measured by the volume of new orders being placed with business in relation to the working capital of corporations, (*c*) the security market's demand for funds (i.e., the security loans of banks), (*d*) the government demand for funds (i.e., goverment bonds held by banks), (*e*) the banks' ability to extend credit (i.e., the size of its excess reserves), and (*f*) the supply of bonds outside of government agencies.

The studies also show the importance of each of the above factors which influence interest rates. Statistics of the last twenty

years indicate that the following ratios have, in the order named, a most important effect on interest rates:

$$\frac{\text{Demand for commercial loans}}{\text{Liquidity-assets}},$$

$$\frac{\text{Volume of security loans}}{\text{Liquidity-assets}},$$

$$\frac{\text{Volume of government securities held by banks}}{\text{Liquidity-assets}}.$$

These studies show that the most volatile factor affecting interest rates is the business demand for money, as it is reflected in the demand for commercial loans. At times the effect of this factor is obscured by inflows of gold which raise the money supply, by increases in government borrowings, or by changes in the Reserve requirements of banks. This important factor is, nevertheless, always at work. The authors have devised methods for isolating its independent effects.

These studies show that the important variable, the demand for commercial loans, can be anticipated by an index constructed from the new-order series published by the Institute of Applied Econometrics in combination with data on demand deposits. (The latter item reflects the working capital of corporations.) By determining the quantitative effects on loans of the changing volume of new orders and demand deposits, it is possible to determine the volume of loans which is likely to result from government activities (such as the defense program) affecting business.

By accurately measuring the importance of excess reserves along with the other factors which affect bond yields, these studies give a basis for calculating the probable levels of bond yields for from one month to one year ahead.

All these separate measurements of the supply and demand forces which affect the high-grade bond market provide—in the form of a final index—an adequate way of measuring the effect of the forces which determine the actual expected level of bond prices. The final index of bond-market conditions has this virtue of indicating expected levels, because the index itself reflects the

quantitative influence of each separate type of demand which materially affects the long-term trend of bond prices and because each of its components is given just that importance which the data of the last twenty years have indicated is justified.

APPENDIX

NOTE ON THE ACCELERATION PRINCIPLE

The "acceleration principle" has acquired a status in economics, and, in fact, its progenitor has received a good deal of attention from one of us (Roos). But we do not now regard it as the best way of explaining capital-goods activity and, in fact, avoid it altogether. Realistically, what businessmen do in planning their capital-goods programs is to compare their productive capacity C with current and expected demand. If demand is pressing upon capacity, they will plan very large capital outlays; if demand is far below capacity, they will plan to invest very little. Thus, if capacity in an industry is 100 and demand is 95, capital outlays will be very large; whereas if demand is 50, capital outlays will be very small. But, according to the acceleration theory, the acceleration component of capital-goods demand, owing to a rise in demand from 40 to 50, would be as large as the component for a rise from 85 to 95, irrespective of idle capacity.

It is true that the rate of change may influence businessmen in deciding what demand to expect and provide for, but how many does it influence and to what extent? There are businessmen who reverse the acceleration theory, who say that sales are likely to slump off soon because they are currently rising so rapidly.

In *The Dynamics of Automobile Demand* (pp. 31–65), we not only presented formulas which lacked the acceleration term but offered alternative explanations to show that these significant correlations did not necessitate acceptance of the acceleration principle. The acceleration principle as a general rule of demand for capital goods runs into difficulties. Suppose that (to take very simple cases) the demand y_i for a consumer's good is a linear function of national income I,

$$y_i = a_i I + b_i \qquad [a > 0],$$

and that the demand for all consumers' goods is

$$\Sigma y_i = I \Sigma a_i + \Sigma b_i ;$$

and the demand z_i for a capital good is

$$z_i = I + d_i \frac{dI}{dt} + e_i \qquad [c > 0, d > 0]$$

and that the demand for all capital goods is

$$\Sigma s_i = I\Sigma c_i + \frac{dI}{dt}\Sigma d_i + \Sigma e_i .$$

The acceleration principle implies that the d's are positive and significantly different from zero.

Prices are assumed constant and equal to unity. The total expenditure is

$$\text{Expenditure} = (\Sigma a_i + \Sigma c_i) I + d_i \frac{dI}{dt} + \Sigma e_i .$$

In an economy with zero credit expansion and in which income fluctuations are entirely due to velocity changes, expenditures equal national income, and

$$I = (\Sigma a_i + \Sigma c_i) I + \Sigma d_i \frac{dI}{dt} + \Sigma e_i .$$

The equality can hold in this simplified case only if (*a*) all d's are zero; that is, if the acceleration principle be denied; (*b*) some d's are negative; that is, if some capital-goods activities operate on a *deceleration* theory; and (*c*) $\Sigma e_i = 0$.

If credit expands by an amount M, the equation is

$$I + M = (\Sigma a_i + \Sigma c_i) I + \Sigma d_i \frac{dI}{dt} + \Sigma e_i ;$$

and in this case the d's can all be positive if M is positive, but the d's are subject to the condition $\Sigma d_i = M(dI/dt)^{-1}$. If M is negative, some d's must be negative, which again requires a deceleration principle. In other words, only an economy in which credit is always expanding can operate on the acceleration principle.

Use of the acceleration principle leads to logical inconsistencies in these simplified cases. Therefore, on the basis of theory as well as of case histories, the acceleration principle, as commonly stated, is of uncertain value for explaining capital-goods activity.

ADVERTISING EXPENDITURES: A SUGGESTED TREATMENT[1]

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THE general theory of selling costs, which received its initial statement of any length at the hands of Professor Chamberlin, has been subsequently re-examined by several writers with illuminating results.[2] Not all authors have used precisely the same assumptions, nor have they in every case been concerned with the problem in quite the form in which Professor Chamberlin originally raised the issue. A solution to the theoretical problem of selling expenditures is here offered which, the writer believes, is both simpler and more flexible than any of those hitherto available; but it is conceded that the differences in substantive conclusions are not great.

I

Professor Chamberlin's[3] theory of selling costs is based on the reasonable assumption that selling costs yield, first, increasing returns but subsequently decreasing returns. In the complete case,

[1] The writer is indebted to the Social Science Research Council for a fellowship, when the present paper was partially developed.

[2] An extensive bibliography of the literature on selling costs up to 1936 will be found in E. H. Chamberlin, *The Theory of Monopolistic Competition* (2d ed.; Cambridge, Mass., 1936), p. 217. The theoretical problems raised by selling expenditures have been analyzed especially in the following: *ibid.*, chap. vii; T. O. Yntema, summary of a paper read before the American Economic Association, December, 1933, in *American Economic Review, Supplement*, XXIV (1934), 21–23; H. Smith, "Advertising Costs and Equilibrium," *Review of Economic Studies*, II (1933), 62–65; Robert M. Shone, "Selling Costs," *Review of Economic Studies*, II (1933), 225–31; R. D. Soucey, "Group Equilibrium with Selling Costs Variable," *Review of Economic Studies*, VI (1939), 222–25; E. K. Zingler, "Advertising Costs and the Maximization of Profit," *Economica*, VII (new ser., 1940), 318–21. Some discussion of the special problems of advertising and duopoly will be found in George J. Stigler, "Notes on the Theory of Duopoly," *Journal of Political Economy*, XLVIII (1940), 521–41, at 537–39.

[3] *Op. cit.*, chap. vii.

selling costs, the product offered for sale, and prices are all variable simultaneously. But Chamberlin finds it convenient to develop his theory through three partial cases, taking one variable at a time, while the other two are set at rest. For example, by taking price and product as given, it is possible to indicate the optimum selling-cost outlay; or, again, by assuming total selling cost and product as given, one can indicate the optimum price. The complete case in which all three variables are dealt with simultaneously is treated only summarily by indicating the general characteristics of the equilibrium adjustment.[4]

This technique is theoretically unobjectionable, but it is cumbersome in comparison with the neatness and simplicity of the treatment elsewhere in the theory of monopolistic competition. The theory cannot be expounded diagrammatically without the use of numerous figures, and only by visual comparison can one indicate the optimum combination of price, product, and selling expenditure.[5] Moreover, there is perhaps the added disadvantage that the problem is not formulated in a manner analogous to that in which it would present itself to an entrepreneur in the real world. Typically, the latter would doubtless proceed on the assumption that there would be some demand for his product, even with zero selling-cost outlays. What the entrepreneur would consider important is the increment in sales receipts accompanying increments in selling expenditures. He would ask: "How much more can I sell and at what prices if I make selling outlays of differing amounts, and will my net returns be greater or less than if I make no selling expenditures whatsoever?"[6] The typical retail merchant, for example, would assume that he would have some sales from merely displaying his merchandise, even if he did not advertise at all.[7] His problem is: "How much will advertising in-

[4] *Ibid.*, pp. 147–49.

[5] See, e.g., *ibid.*, pp. 147–49 and 167–69, where the solution is briefly sketched. A diagram showing the accomplished equilibrium adjustment, but not the process, appears on p. 148.

[6] Smith (*op. cit.*, p. 63) poses the problem in precisely this fashion.

[7] Zingler (*op. cit.*, p. 318) suggests that advertising may be divided into two parts, "one of which is referred to as quantity-increasing—the assumption is that its purpose is to sell a greater quantity of a commodity at the same price—and the other is

crease the demand for my product under given conditions, and what is the maximum advertising outlay it will pay me to undertake?"

The exposition that follows attempts to combine at the same time varying advertising expenditures and varying prices (and quantities) and to indicate what combination thereof will maximize returns to the enterprise. Instead of dealing with one variable at a time, the method to be described allows one to deal with price and advertising expenditures as simultaneous variables. The problem of product differentiation, however, is not dealt with except in so far as advertising expenditures inevitably change the buyers' estimation of the worth of the commodity. From the point of view of the producer at least, the product is assumed to be given in the sense that the same production function governs its output throughout the whole analysis.[8] Our treatment is graphical rather than algebraic.

Instead of speaking of "selling costs" in what follows, we speak of "advertising outlays" or "expenditures." Although the latter term is not unambiguous, it is perhaps less imprecise and offers fewer problems of definition than does the broader term "selling costs."[9] While the following discussion is directed to what is ordinarily understood by "advertising expenditures," it will for the most part be equally valid when applied to the broader category of expenditures known as "selling costs."

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referred to as price-increasing—the assumption is that its purpose is to sell the same quantity of the commodity in question at a higher price." Such a distinction serves no very useful purpose, since the firm is concerned to maximize returns by whatever means available, i.e., by varying both quantity and price if necessary.

[8] On the cost side, with given prices of input factors, we operate with one production-cost schedule all the way through. In Chamberlin's analysis each product differentiation is associated with a unique cost schedule, which presumably is assumed to be an inevitable accompaniment of differentiating the product. While this way of treating product differentiation is in the writer's opinion not wholly satisfactory, the difficulties involved do not affect the present argument and need not be considered here. The initial stages of our own analysis employ the simplifying assumption that production costs are zero.

[9] As is common knowledge, the demarcation in many cases between production costs and selling costs is shadowy rather than sharp.

II

In Figure 1 we make the case very simple by assuming that production costs are zero and that the only relevant consideration is advertising cost. Let DD_1 be the demand curve confronting the firm, independent of any advertising outlays: it indicates the amount the firm would sell at all various prices if it did *not* advertise. If MR_1 is the marginal revenue curve appropriate to DD_1,

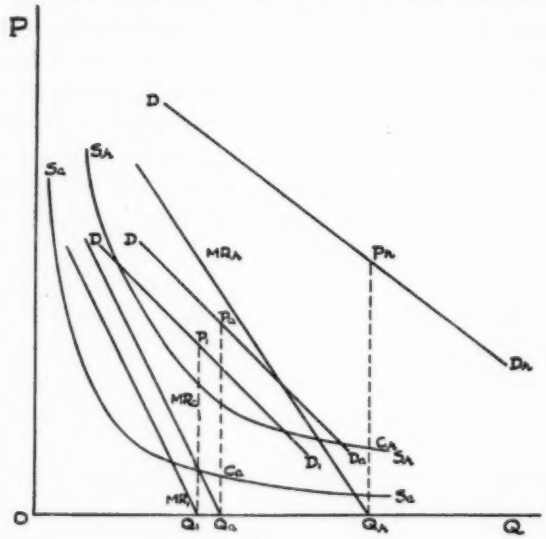

FIG. 1

the firm will maximize its net returns by fixing a price of P_1, at which the quantity sold is Q_1, since only when marginal revenue is zero will total gross receipts be a maximum. Let us now assume that the entrepreneur contemplates advertising outlays. Let us assume, as seems reasonable, that some minimum advertising expenditure, A, must be incurred before the effect upon the demand schedule becomes perceptible, and let DD_a be the new demand curve resulting from it.[10] With aggregate advertising expenditure,

[10] In Fig. 1, DD_a is more than a "perceptible" distance from DD_1. But this is only to facilitate the reading of the diagram by visual inspection. It is logically incorrect.

A, the curve of average advertising cost will be a rectangular hyperbola, S_a. The horizontal distance between DD_1 and DD_a indicates the increase in the quantities that can be sold at each respective price as a consequence of spending an aggregate amount A on advertising. The effect upon sales may be marked at some prices but negligible at others, depending upon a variety of factors: DD_a need not parallel DD_1. With MR_a the marginal revenue curve corresponding to the average revenue curve DD_a, the optimum price is P_a, at which the quantity sold is Q_a. Aggregate excess of receipts over expenses is indicated by the rectangle having OQ_a as its base and P_aC_a as its altitude. As drawn in the figure, it is clear that, with aggregate advertising expenses of an amount A, net receipts are smaller than those to be had without advertising.

There will be a whole family of demand curves from the right and upward from DD_a, corresponding to advertising outlays of $A + 1$, $A + 2$, $A + 3$, ... R . . . . N. . . . . Similarly, there will be a family of S curves (one for each aggregate amount of advertising expenditure), each of which indicates the range of average advertising costs at different rates of sales. The curve S_{a+1}, slightly to the right of S_a, will be relevant to the demand curve DD_{a+1}, and so forth.

The position of each demand curve being determined in the manner just described, the optimum rate of sale for each demand curve will be where its respective marginal revenue curve intersects the quantity axis.[11] The price will be that indicated by erecting a perpendicular from that point to the appropriate demand curve. But the intersection of this perpendicular with the curve of average advertising costs calling the particular demand curve into existence shows how much advertising costs will average per unit of sales. Hence, the series of points C_a, ... , C_r show, by their vertical distance from the base, average advertising costs for each optimum rate of sales; and the series of points P_1, P_a, ... , P_r, indicate optimum selling prices.

Figure 2 is based directly on Figure 1. If we connect all the optimum selling prices on the different demand curves, we obtain

[11] Let it be recalled that we are so far assuming zero production costs.

a curve *LAR*, the locus of optimum average revenues. Similarly, by connecting all the average advertising costs we secure a curve *LAS*, the locus of average advertising costs. Every point on *LAR* is a point on a particular demand curve: that point at which aggregate gross receipts are a maximum, i.e., if production costs are zero, the point at which marginal revenue becomes zero. Every

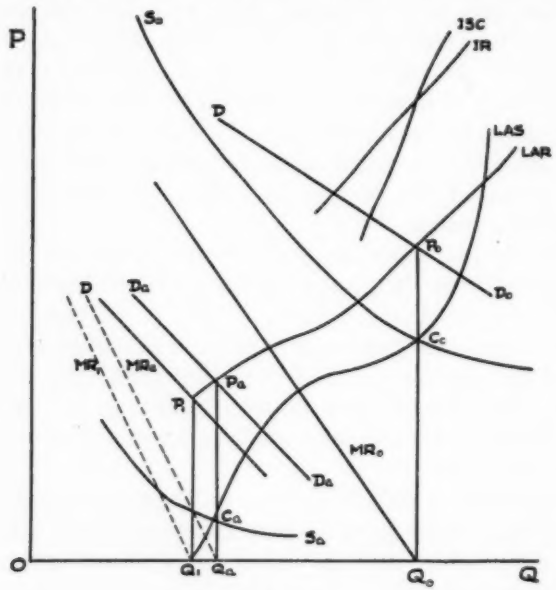

FIG. 2

point on *LAS* indicates average advertising cost when average revenue is equivalent to the point on *LAR* exactly above it (or below it).[12]

In Figure 2, if we operate with the *LAS* curve, we can read off the results in terms of gross income of advertising outlays of different amounts by raising a perpendicular to *LAR*. On the other

[12] Since there are doubtless diminishing returns from expenditure on advertising, average advertising costs may exceed average revenue. In Fig. 2, it will be observed, *LAS* is below *LAR* through most of its length, but it crosses *LAR* high up and to the right and then subsequently lies above it.

hand, if we operate with the *LAR* curve, we can deduce the advertising outlays required to produce a given total gross income (for a particular demand curve) by dropping a perpendicular to *LAS*. For any point on the abscissa the difference between the area of the rectangle indicating gross receipts and that indicating total advertising expenditure is, of course, the net gain. But what constitutes the *optimum* advertising expenditure?

If curves such as *LAR* and *LAS* are continuous, each of them has a marginal or incremental curve appropriate to it. Let such incremental curves be *IR* and *ISC*, respectively.[13] The intersection of these two incremental curves must determine the optimum advertising expenditure. In other words, the rectangle indicating profits will be the largest possible at that point on the abscissa which lies directly below the point of intersection of *ISC* and *IR*. In Figure 2 this optimum is indicated by S_o, which creates the demand curve DD_o. The marginal revenue curve relevant thereto is, of course, MR_o, and the price is P_oQ_o, while the quantity sold is Q_o. Average advertising cost per unit of output is C_oQ_o. The points P_o, C_o, and Q_o lie directly below the point of intersection of *IR* and *ISC*, which fixes their position.

III

It is worth speculating upon the different shapes and positions that *LAR* and *LAS* might conceivably assume. Advertising may have more effect upon the demand at high than at low prices. If this be true, then the quantities sold after advertising is first undertaken may be smaller and the price higher than when no selling outlays at all were made. In terms of the courses traced by *LAR* and *LAS* this means that they may be "backward rising" over a certain range before they commence moving upward and to the

[13] In Fig. 2 both *IR* and *ISC* are not drawn throughout their whole length but only in the neighborhood of their point of intersection. This is done deliberately for two reasons: first, the diagram would be unnecessarily complicated and, second, *ISC* (and possibly *IR*, too) would probably describe a quasi-parabola in its early stages. Since *ISC* is "marginal" to *LAS*, this is very likely if *LAS* typically has the shape we have given it. However, it should be emphasized that in any case *ISC* has its origin at Q_1, while *IR* has its origin at P_1.

right.[14] If, on the other hand, advertising primarily increases demand in the lower price ranges, *LAR* and *LAS* would move more rapidly to the right and less quickly upward than we have drawn them in Figure 2.

In general, it seems reasonable to assume that, after a certain initial stage, advertising by any given firm will at first yield increasing returns but then subsequently decreasing returns. In other words, demand curves will at first shift upward and to the right more rapidly than the rectangular hyperbolas representing the larger advertising outlays which "create" the demand. Consequently, the vertical distance between *LAR* and *LAS* will tend to widen as they move to the right. Subsequently, however, it becomes more and more difficult to attract customers from competing firms or to alter buyers' preferences for this type of product as opposed to others. As a result, *LAS* begins to rise more rapidly than *LAR:* the vertical distance between them narrows, until in due course *LAS* cuts *LAR* from below and ultimately lies above it. Beyond the point of intersection, of course, average advertising expense is greater than average receipts.

It is not inconceivable that there might be more than one point of intersection of *LAR* and *LAS*. This could be the case, for example, if, as total advertising expenditures increased, one gradually moved over to an entirely different type of advertising which permitted access to markets not previously available at all. For instance, if a firm is shifting from a local market to country-wide distribution and is planning a national advertising program through the popular magazines and the radio, it will probably have to spend some large sum as a minimum or not try to tap the national market at all.[15] Consequently, the distance between *LAR* and *LAS* as we move to the right in Figure 2 may narrow but subsequently widen out again. As total advertising expenditures are increased, the resulting demand curves for the product may

[14] While it is possible that *IR* could be negative over a certain range, the same is not true of *ISC* because the assumption is that the increment in advertising expenditures is always positive from an outlay of *A* on upward.

[15] This is analogous to the point previously made, viz., that it will not be worth advertising at all unless one is willing to spend some minimum sum.

become more or less elastic. The more elastic they become, the flatter will *LAR* tend to be. And it is not inconceivable that *LAR* might dip below the horizontal for some small range, although this seems unlikely. In this instance advertising could be said to have reduced the price of the product—an advantage often claimed on its behalf. In any case *LAR* would not continue to fall indefinitely, because the limit to gradually increasing elasticity is a horizontal demand curve.

If one is concerned with "long-run" solutions as contrasted with optimum short-run adjustments, it is necessary to recognize that what one firm can do under conditions of monopolistic competition is also open to other enterprises. No one firm can long retain any advantage it has gained. If one admits the possibility of excess returns tending to disappearance under conditions of monopolistic competition, leaving only "normal" returns (in some sense), then the additional gains from advertising expenditures would also disappear. One would obtain a "tangency" solution with respect to advertising that was parallel to that obtained by Chamberlin in his case of group equilibrium.[16] Diagrammatically, the group equilibrium case would be roughly as follows: In Figure 2, *LAS*, except at its very beginning, would lie above *LAR* throughout its whole range, but they would be tangent to each other at some one point upward and to the right of the origin. Only one combination of advertising expenditure and resulting demand curve would allow an equality between average revenue and average advertising cost. In one respect, however, such a solution contradicts one basic assumption with which we have chosen to operate thus far. We have assumed that, even without advertising, a demand for the product would still exist. Consequently, as long as we retain this assumption there would be no necessity for the entrepreneur to accept the tangency adjustment, since he could always retreat to the position of zero advertising-cost outlays and obtain a return over the going rate.[17] The case can be modified, however, to make it realistic easily enough by assuming that no demand for the product would exist without

[16] *Op. cit.*, p. 92.

[17] Once we admit production costs, of course, this difficulty disappears.

advertising.[18] In this instance *LAR* as well as *LAS* would commence on the abscissa. For the tangency case of group equilibrium *LAR* would lie below *LAS* throughout its whole range except for the point of tangency. Only one advertising outlay would permit the firm to obtain a normal rate of return.

Since advertising can take such a wide variety of forms on short notice, however, it is doubtful if group equilibrium in the usual sense is more than a theoretical possibility. In the writer's opinion it is improbable that a group equilibrium embracing a tangency solution has any counterpart in the real world. It may be approached at times, but it is unlikely ever to be attained. What is more probable is that the range over which *LAR* lies above *LAS* in Figure 2 is considerably smaller than we have drawn it. It is often said, for example, that much competitive advertising "cancels out" or that, where all the firms in an industry advertise, no one firm can afford not to advertise on about the average scale without reducing its profits. In terms of Figure 2 such commonplace expressions are nothing more than a way of saying that *LAS* lies above *LAR* for all but a small portion of its length. Some considerable advertising outlay is necessary to avoid losses, simply because other firms advertise. From the point of view of the consumer the price of the product is probably higher and the quantity sold smaller than would be the case if all firms cut their advertising expenditures by the same percentage.

IV

The argument so far has been formulated on the simplifying assumption that production costs are nonexistent, but the method already outlined can be applied to the case of positive production costs with only minor modifications.

If conditions of constant cost prevail, then, of course, the intersections of all the many marginal revenue curves with the horizontal marginal cost curve will determine the optimum prices and

[18] This case is perhaps not quite so fantastic as it might first appear. Many pleasure resorts in the mountains and beaches now in existence have their expenses almost entirely made up of selling costs in the economic sense. What people come to enjoy is the air or the view. What they pay for as an admission charge is mostly the cost of having the existence of "the view" brought to their attention.

quantities for the many demand curves resulting from advertising in different amounts. Rather than the optimum prices and quantities being determined (as in Figs. 1 and 2) by the intersections of the marginal revenue curves with the abscissa, they will be fixed, instead, by the points of intersection of the different marginal revenue curves with the horizontal straight line indicating marginal cost of production. For the same series of demand curves as in Figure 2 the optimum prices will in every case be higher and the quantities sold smaller as a consequence of introducing production costs which are constant per unit of output. The locus of average combined cost, which we could call *LACC*, would commence, not on the abscissa, as in Figure 2, but at some point above and to the left of the position it occupies in the figure.[19] *LAR*, similarly, would commence in the same vertical plane as *LACC* but would be above and to the left of its position in Figure 2. The origin of *LAR* might be either above or below the origin of *LACC*, though both are in the same vertical plane, according to whether the firm is able to show an excess of average receipts over average costs with zero outlays for advertising. If average receipts at the optimum point on DD_1 exceed average costs, then the origin of *LAR* will lie above the origin of *LACC* and vice versa.[20]

The case where production costs are not constant per unit of output can be dealt with similarly by means of the apparatus in Figures 3 and 4. In Figure 3 let DD_1, as before, represent the demand conditions for the product prior to any expenditures for advertising. MR_1 is the marginal revenue curve appropriate to DD_1. Let *APC* and *MPC* be, respectively, the curves of average and marginal production costs per unit of output. With advertising outlays of zero the firm will maximize its returns by producing at the rate of Q_1 sold at the price Q_1B, since at this rate marginal cost is equal to marginal revenue. Actually, the firm suffers losses under these conditions, since average cost of production is greater

[19] No curve with the notation *LACC*, of course, appears in Fig. 2.

[20] DD_1 is the demand curve for the product before any selling expenditures are undertaken. With production costs of zero *LAS* must always begin on the abscissa. *LAR* will always lie above it in the same vertical plane as long as there is some demand for the product even without advertising outlays.

than average revenue: the former being AQ_1, while the latter is only BQ_1. Losses are AB per unit of output or, in the aggregate, $(AB)(OQ_1)$. Nevertheless, if DD_1 is the demand curve and APC the cost function, the firm can only worsen its position by shifting to any other price and output.[21]

Let us now suppose that the firm attempts to improve its position by advertising. As before, we may assume that a minimum

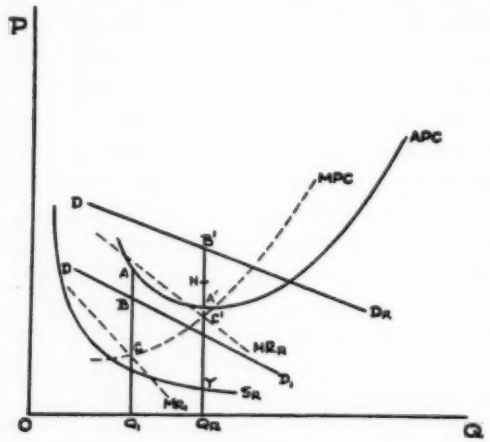

FIG. 3

amount A must be spent on advertising before there is any perceptible change in the demand curve. This will create a new demand curve, DD_a, and, as before, a rectangular hyperbola, S_a, showing average advertising cost per unit at different rates of output. However, since DD_a is possible only if an amount A is spent on advertising, we may regard A as a "fixed" expense having no influence upon the optimum rate of output.[22] Rather, the op-

[21] Conceivably, the firm might be better off by not producing at all than by producing OQ_1.

[22] The sequence of argument here is that advertising in the amount A determines the demand curve DD_a; given DD_a, the intersection of MR_a and MPC determines the optimum rate of output. S_a, the rectangular hyperbola indicating average advertising costs per unit output, has no bearing upon the determination of the optimum rate of output. Once the demand curve is given, this is entirely a matter of marginal costs of production and the marginal revenue curve relative to the given demand curve.

timum rate of production will be determined by the intersection of MR_a and MPC. The optimum rate of output being so determined, average advertising cost per unit of output is derived according to the usual procedure for determining "fixed" costs per unit of production. Total average costs per unit of output is simply the summation of average production costs and average advertising costs.

Since DD_a would lie very close to DD_1 in the diagram, it is not shown in Figure 3. Similarly, MR_a and S_a are not shown either. However, let DD_r represent the demand curve corresponding to advertising outlays of an amount R so that DD_r is upward and to the right of DD_a. In other words, R is some advertising expenditure of greater total amount than A. The argument of the preceding paragraph applies without alteration except for the change of lettering. The optimum rate of output is Q_r. Average cost of production per unit of output is $A'Q_r$. Average advertising cost per unit is YQ_r. Total average cost (production and advertising cost) is NQ_r, where NA' equals YQ_r. The intersection of MPC and MR_r at C' determines the optimum rate of output.

It is clear at once that B and B' are only two optimum points on two different demand curves where the optima are determined in the manner already described. But between DD_1 and DD_r there are theoretically a great number of demand curves, each the consequence of a particular outlay on advertising. DD_1 is the demand curve before any advertising; DD_r the demand curve when advertising outlays are R.[23] Between them is a demand curve corresponding to every advertising outlay greater than zero but less than R. And beyond DD_r there will be similar demand curves corresponding to various advertising outlays greater than R.

In the same manner there will be a whole series of points like point N, lying between A and N, indicating average total costs when price and output have been determined by the intersection of MPC and the many marginal revenue curves corresponding to the different demand curves.[24] Each and every demand curve, ex-

[23] Once it is decided to make advertising outlays of an amount R, the rectangular hyperbola S_r has no effect on marginal cost and hence no effect on output. The only effect S_r has in determining output is to call DD_r into existence.

[24] At point A in Fig. 3 average total cost is production cost only, since by assumption DD_1 is the demand for the product when outlays for advertising are zero.

cept DD_1, will have a related rectangular hyperbola like S_r, which, in a sense, calls it into existence.

The net consequence is that we have a whole series of points like B and B', which may be connected into a line to yield a curve which is the locus of average revenue; each point on the locus curve is an optimum in the sense already indicated. In the same

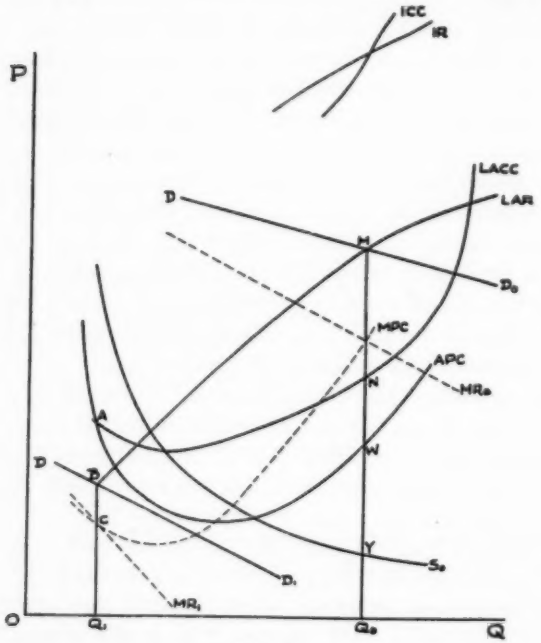

FIG. 4

manner we have a whole series of points like A and N representing average total costs. These can likewise be connected into a locus curve. Let us now turn to Figure 4.

Figure 4 is nothing more than the extension of Figure 3 to its logical conclusion. APC and MPC are, respectively, the curve of average production costs and the curve of marginal production costs. As before, DD_1 and MR_1 are the average and marginal revenue curves, portraying the demand conditions for the product

before any selling outlays are undertaken. LAR is the locus of the optimum average revenues determined in the manner previously indicated,[25] while $LACC$ is the locus of average combined (production and advertising) cost. $LACC$ and LAR have incremental curves correlative to them—ICC and IR, respectively—which are only sketched in part in order not to complicate the diagram unduly. Where these two incremental curves intersect must determine the optimum rate of production, the optimum advertising expenditure, and the optimum price. For the sake of completeness these are all shown in Figure 4. The optimum advertising-cost outlays are an amount O, and per unit of output they are indicated by the rectangular hyperbola S_o. When advertising is of a total sum O, the demand curve is DD_o, whose marginal revenue curve is MR_o. But with a given demand curve DD_o, the optimum price is MQ_o, at which the quantity sold is Q_o. Average production cost per unit of output is WQ_o, average advertising cost is YQ_o, and average combined cost is NQ_o. YQ_o is, of course, equal to NW. MN is average profit per unit of production and sale, while $(MN)(OQ_o)$ is the aggregate profit. This is the largest total gain which the firm is able to obtain, given the original demand for its product, DD_1, the cost function, APC, and the effect of advertising upon the demand for its product.

The shape and position of $LACC$ and LAR (and hence ICC and IR) are determined by two factors: first, the effect of advertising upon the original demand for the product, whether it becomes more or less elastic, etc.; second, the behavior of APC as the firm increases its output beyond Q_1. For the advertising outlays prescribe the demand curve for the product, while the optimum rate of production and sale is determined by the intersection of the marginal production cost and the marginal revenue curve appropriate to the given demand curve. $LACC$ and LAR are a function of two variables, not one.

V

As far as the writer can discover, the only diagrammatic solution to the problem of advertising outlays at all similar to the one

[25] That is, by joining all points such as B, B', etc., in Fig. 3 into a curve.

described in the previous section is one put forward originally by H. Smith and then adapted to a diagram in three dimensions by Robert M. Shone.[26] Smith's technique is to take any price on the demand curve before advertising is undertaken and determine the optimum advertising expenditure for that particular price. He then takes various prices in sequence and determines in a similar manner the optimum advertising outlay for each price. This

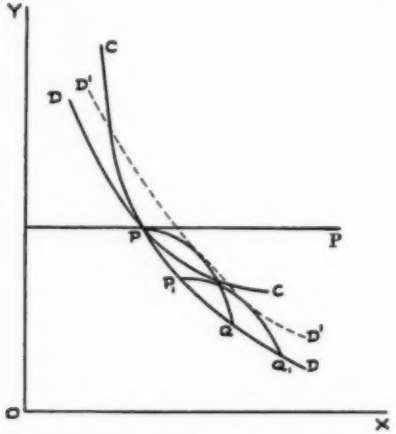

FIG. 5

yields a series of appropriate (i.e., most profitable) advertising expenditures relevant to the various prices. In order to simplify the ensuing commentary on Smith's technique his diagram is reproduced in Figure 5 with its original lettering.[27] In Figure 5, *DD* is the demand curve for the product in the absence of advertising. The firm is assumed to be in equilibrium, with no unnecessary profits being earned, at a price *P* on *DD*, at which *CC*, the production-cost curve, is tangent to the demand curve. To consider the effect of advertising:

[26] Smith, *op. cit.*, p. 62; Shone, *op. cit.*, p. 225. Smith states in a footnote that "the diagram owes its present shape to Mr. A. P. Lerner."

[27] See *op. cit.*, p. 62. A more satisfactory rendition of Smith's figure appears in his article "Discontinuous Demand Curves and Monopolistic Competition," *Quarterly Journal of Economics*, XLIX (1935), 542–50 (cf. Diagram I, p. 544).

Draw the line PQ from the point P so that the vertical distance between any point on PP (the price line) represents the average cost per unit of selling the quantity indicated at the price P. PQ is thus the net average receipts curve, after deducting the cost of advertising, at the price P. Thus, at the price P, the firm can now make a profit: this profit shall be at its maximum, for that price, at the point at which it is possible to describe the largest rectangle from OY with the top of the right-hand upright at a point on PQ and its bottom at a point on CC.[28]

In other words, wherever the largest rectangle of the sort defined can be drawn in the area inclosed by CC and PQ, we have the optimum advertising outlay for the price P: per unit of salable product it will be the vertical distance from PQ to PP. But, if we can draw a line such as PQ from the price P on DD and determine the optimum advertising outlay for that price, we can also draw similar lines, e.g., P_1Q_1, from all other points on DD and determine similar optima. Hence, for every price we have a curve such as PQ, or P_1Q_1, and each such curve has an optimum point.[29] By drawing an envelope curve to all such optimum points on the PQ curves, we get the curve labeled $D'D'$ in Figure 5.[30] Having determined $D'D'$, we have then only to compare it with CC in order to discover the maximum-profit position. Some one price and advertising outlay, presumably, will yield a larger aggregate net profit than any other combination of price and advertising expenditure, i.e., the largest rectangle having an altitude extending vertically from CC to $D'D'$ and a base from that point on CC to OY.[31] It should be observed that the selling price will be higher

[28] Smith, "Advertising Costs and Equilibrium," pp. 62–63.

[29] It should be observed in passing that PQ curves which lie below CC throughout their whole length necessarily involve the firm in losses rather than profits through advertising. The curve P_1Q_1, for example, in Smith's diagram is such a curve.

[30] That is, $D'D'$ is tangent to all the PQ curves at their respective optimum points. Smith calls it the average net receipts curve ("Advertising Costs and Equilibrium," p. 63).

[31] "The absolute maximum profit position is that at which it is possible to describe the largest rectangle from OY with the top of its right-hand upright at a point on *any* of the PQ curves and with the bottom at a point on CC. As $D'D'$ is the envelope of all PQ curves, this is also the largest rectangle with its right-hand upright limited by $D'D'$ and CC" (*ibid.*, p. 64).

than the point on $D'D'$ where this rectangle is inscribed.[32] For instance, the tangency point of PQ and $D'D'$ is the optimum advertising outlay for the price PP.[33]

One comment to be made on this solution relates to the probable shape which $D'D'$ might assume. Let us recall that $D'D'$ is an envelope curve tangential to all curves such as PQ at the point indicating the maximum profit possibilities for various prices when advertising outlays are incurred. Each point on $D'D'$, therefore, lies directly below a particular point on some demand curve called into existence when the optimum advertising expenditure for a particular price is incurred. For example, at the price PP an advertising expenditure per unit in the amount shown by the vertical distance downward from PP to the tangency point of PQ, and $D'D'$ calls into existence some demand curve which passes through that point on PP. But if we take a price $P + \Delta P$, there is no assurance that the corresponding point on a line similar to PP will lie on the *same* demand curve as that created by making the optimum advertising expenditure at the price P. In other words, at prices P and $P + \Delta P$ the respective optimum advertising expenditures may well be different, so that P and $P + \Delta P$ lie on two different demand curves. Unless the optimum advertising expenditures are identical at P and $P + \Delta P$, the demand curves *must* be different. But if this is true, $D'D'$ need not have any such regular shape as has been assigned to it in Figure 5. It would be continuous, but it might have sudden changes of direction, depending upon how effective were advertising outlays at different prices.[34] Since $D'D'$ is formed by taking the optimum advertising

[32] In his article, "Discontinuous Demand Curves and Monopolistic Competition," p. 544, Smith draws a curve connecting all such prices and writes: "The locus of all such points is $A'R'$, the 'demand' curve for the product when all the resources of publicity are fully exploited by the producer" (p. 545).

[33] It should be pointed out that only that portion of the PQ curves, of which there is a whole family, lying above CC is relevant to the discussion of positive returns from advertising. P_1Q_1, for example, shows negative returns from advertising. Smith does not indicate this restriction in his discussion.

[34] If a firm makes any given advertising expenditure, the shift in the demand curve at all prices will probably not be equal; at least there is no reason to suppose this would be true. However, this is not Smith's technique at all. He derives $D'D'$ from a schedule showing the optimum sum to be spent on advertising at each and

expenditure for each price, there is no reason to suppose that its shape is predictable on a priori grounds. In any case it is not obvious that its form would approximate that assigned to it in Figure 5. And if $D'D'$ might assume a variety of shapes for the reasons already suggested, no one combination of price and advertising expenditure necessarily exists which is a *maximum maximorum*.[35]

Our other comment on Smith's technique is simply that in the typical case an entrepreneur would not approach the problem of advertising by the steps just described. Surely, the entrepreneur would be more likely to visualize the problem directly in terms of increments of advertising expense compared to increments of profits than first to calculate the optimum outlays at all various prices and then select that one which is superior to all others. It is submitted that the method described in the earlier portions of the present paper is to be preferred, if for no other reason, because as an approach in terms of marginal increments it is symmetrical with the strategy commonly employed in attacking similar problems.

One further comment on Smith's analysis. He starts his analysis from a "long-run" equilibrium adjustment for the particular firm: average cost is equal to average revenue. Is it equally applicable to the case of a firm in short-run equilibrium, i.e., where marginal cost is equal to marginal revenue but average revenue is in excess of average cost? Perhaps the same technique can be employed. But the diagram will be so much more complex and difficult to interpret than Figure 5 that its expository usefulness would be greatly diminished.[36]

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every price. Hence, theoretically, every optimum outlay for advertising might call forth a different demand curve. This point has been alluded to by Yntema (*op. cit.*, p. 22).

[35] Cf. above, pp. 544–45.

[36] If we are concerned with only short-run equilibrium, where it suffices if marginal cost equals marginal revenue, CC (Fig. 5) will lie below DD over much of its range; curves like PQ will cut DD and terminate on CC wherever CC lies below DD. If $D'D'$ is an envelope curve as in Fig. 5, it may be above or below DD and may even intersect it. Our earlier suggestion about possible irregularities in the shape of $D'D'$ is doubly reinforced in this case (see above, pp. 554 f.).

VI

As remarked earlier, any conclusions on the effects of advertising reached by the application of the technique here suggested probably will not differ greatly from those derived by other methods. The often raised question as to whether advertising increases the price of the product cannot be answered in unequivocal terms. It will depend upon the shape and position of *LACC* relative to *LAR* in Figure 4. The number of possible shapes which these curves might assume with reference to each other is legion. A few generalizations concerning the determinants, however, are perhaps worth mentioning. First, the more advertising increases the price elasticity of demand for the product as the curve shifts to the right, the less, *ceteris paribus*, will be the rise in price. If the increase in elasticity is very great, advertising might even lower the price below what it would be in the absence of advertising. Second, the more nearly the firm is operating under conditions of falling average cost before advertising is undertaken, the greater the likelihood, *ceteris paribus*, that average combined costs—production and selling—will be as low as or lower than production costs alone before advertising was undertaken. In other words, NQ_0 in Figure 4 *might* be less than BQ_1. The chances of this possibility's being realized in practice seem rather remote. It seems reasonable to suppose, however, that the range over which *LACC* lies below *LAR* for the typical enterprise is rather smaller than we have drawn it in Figure 4. Also, from what empirical studies are available, probably *APC* is more nearly horizontal over the relevant range than we have sketched it. There would appear to be some substantial reasons for believing that the origin of *LACC* is typically above the origin of *LAR* in the case of business enterprises in the real world. Probably most firms would operate at a loss if they did not advertise: if their more immediate competitors do advertise, the demand curve for their particular product without advertising would lie below their cost curve. Advertising puts them in the range of profitable operations. But a simultaneous cut in advertising by all firms in the industry might lower the price and increase profits just because so much advertising simply "can-

cels out" between firms in the same general industry.[37] Finally, *LACC* in Figure 4 probably cuts *LAR* from below before very high rates of production are attained, because of the rapidly diminishing returns from advertising. While the familiar "tangency" solution of a long-run equilibrium in monopolistic competition is probably never attained in the real world, nevertheless, the area inclosed by *LACC* and *LAR* in Figure 4 is, perhaps characteristically, considerably smaller than we have portrayed it.

The foregoing analysis has been carried through on the purely theoretical level and, as such, encounters the familiar difficulties when applied to the vastly more complicated real world in which we live. Two limitations of this sort are particularly worth mentioning in any discussion of advertising. First, there is undoubtedly a time lag between expenditure on advertising and the resulting shift in the demand curve for the product. How long this interval will be will depend upon a variety of factors: the advertising media adopted, the form of competitors' advertising, how firmly fixed are buyers' buying habits, etc.; second, the analysis has assumed throughout that the firm knows how effective advertising expenditure is in shifting the demand for its product. In fact, business enterprises are usually far from certain of the effects of advertising upon the demand for their wares and spend a good deal of money trying to find out by devious subterfuges.[38] In other words, real-world business enterprises do not know precisely how much advertising increases the demand for their product or prevents it from declining. Yet this difficulty is present wherever in partial equilibrium analysis one assumes that the firm knows the demand schedule for its salable product. It is probably no more damaging in dealing with the problem of advertising expenditures than elsewhere.

[37] Cf. above, p. 546.

[38] For an interesting discussion of the uncertainty surrounding the effectiveness of advertising see H. Smith, "The Imputation of Advertising Costs," *Economic Journal*, XLV (1935), 682–99.

THE GUARANTEED SECURITY IN FEDERAL FINANCE

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SINCE the creation of the Reconstruction Finance Corporation in 1932, the federal government has employed two general types of borrowing instruments—direct Treasury, and United States guaranteed obligations. The latter type was originally intended to serve as a substitute for the former in financing a temporary program of "recoverable" expenditure. While this intention was never technically superseded, New Deal legislation rapidly expanded the number of lending and "insuring" activities and simultaneously multiplied the kinds and amounts of guaranteed securities to provide the necessary operating capital. Thus indirect federal borrowing for individual instrumentalities led to the rapid growth of the "contingent" debt, as distinguished from the direct debt, in Treasury accounting. The threatened permanence of this dual-debt system was obviated, at least temporarily, by the revision of administrative policy rather than by congressional action. In October, 1941, the Treasury announced that no more guaranteed securities would be sold and that all outstanding issues would be converted at call or maturity into direct obligations. Under this plan the continuing lending functions of federal corporations are to be financed with general Treasury funds.[1]

Little criticism has ever been aimed at the dual-debt system as a fiscal expedient; contemporary comment has usually centered upon the potential budgetary effects of mounting indebtedness for which the Treasury might become liable. While the philosophy and results of public lending will offer much future opportunity for investigation, it is not too early for critical examination of the history and rationale of indirect borrowing in the light of current problems. Such is the task of this paper.

[1] *Federal Reserve Bulletin*, XXVII (1941), 1081.

I

There was no precedent for the guaranteed security in federal borrowing practice prior to the passage of the Reconstruction Finance Corporation Act. There were instances in which the federal government had assumed a contingent liability, but there was no vicarious borrowing through corporations comparable to that developed during the decade of the 1930's. The securities of the War Finance Corporation of 1918 were specifically not guaranteed by the Treasury but were remotely guaranteed through operation of a statutory provision making them eligible as collateral for Federal Reserve bank loans.[2] Indirect borrowing by states through the sale of revenue bonds which are obligations of public agencies represents an analogous development in state finance with one important difference: revenue bonds of state agencies are usually issued on the theory that they are not state debts,[3] while federal guaranteed securities are debts for which the United States is contingently liable.

During the debate on the original and amended R.F.C. bills, current conceptions of the usefulness of a guaranty by the federal government, as contrasted with direct financing out of general funds, were predicated upon three principal ideas. In the first place, the guaranty appeared to be part of the logic of corporate independence. A corporation was to be launched to avoid turning the Treasury into a "glorified bank," but its independence from bureaucratic interference was to be implemented with the power to borrow in the money market on sufficient government responsibility to insure the sale of its securities.[4] Second, the economy and retrenchment policy of the Hoover administration faced the increasingly blunt challenge of inflationist groups seeking increased spending for various types of economic assistance. These

[2] See H. A. Van Dorn, *Government Owned Corporations* (New York, 1926), pp. [1]–15.

[3] See B. U. Ratchford, *American State Debts* (Durham, N.C., 1941), p. 517.

[4] Statement by Undersecretary of the Treasury Ogden Mills in Senate Subcommittee of the Committee on Banking and Currency, *To Provide Emergency Loans . . . . , Hearings on S. 1* (72d Cong., 1st sess.; Washington, 1932), p. 49. Also reprinted statement of Eugene Meyer, governor of the Federal Reserve Board, in *Congressional Record* (72d Cong., 1st sess.; January 4, 1932), p. 1268.

apparently incompatible policies were reconciled in the proposal to create an institution which would prop a crumbling financial structure without further unbalancing the budget. Since the R.F.C. was to engage not in eleemosynary activity but in the business of making well-secured, interest-bearing loans, so the argument ran, its debt would never become a burden upon taxpayers.[5] The proposal to lend $2,000,000,000 to railroads and financial institutions was not, therefore, a compromise with the *principle* of the balanced budget, even though the funds might be provided by the Treasury out of general borrowing. In any event the alternative use of guaranteed securities seemed to have the psychological advantage of limiting the government's responsibility to remote contingencies. Finally, the appeal of "temporary emergency" favored adoption of debt accounting which would make the government's liability readily distinguishable and extinguishable, without burdening the Treasury or adding to the complexity of its statements.

A "backdoor" method of incurring indebtedness for the maintenance of a "bankers' dole" was not universally regarded as an unmixed blessing. But, since some federal responsibility appeared to be necessary if a lending effort were to be successful, the alternatives to the guaranty proposal were limited to two possibilities. Funds for the R.F.C. might be obtained directly from the Treasury's own borrowing operations, thus providing all necessary funds at a minimum cost and avoiding the difficulty that might confront a new agency unsupported by the Treasury; or the corporation's securities might be rendered highly salable by conferring upon them collateral eligibility privileges at the Federal Reserve banks, either as an adjunct of, or as a substitute for, the federal guaranty. As suggested above, the first method was objectionable because it would result in overstatement of the "true" indebtedness of the United States. Regarding the second method, administration spokesmen urged that R.F.C. obligations be made acceptable at the Federal Reserve banks as collateral for loans and advances at a penalty rate of 1 per cent above the prevailing rate

[5] *Hearings on S. 1*, p. 50.

on ninety-day commercial paper.[6] As a substitute for direct federal responsibility, this proposal carried little weight; as an adjunct, it appeared to be unnecessary.

In final form the R.F.C. Act was a compromise, providing both direct and indirect borrowing. The corporation was authorized to borrow either from the Treasury or in the money market with the aid of Treasury facilities[7] through the sale of bonds, notes, and debentures fully guaranteed as to principal and interest by the United States in amounts and upon terms approved by the corporation and the secretary of the Treasury.[8] The corporation was also authorized to issue, with the approval of the secretary, short-term securities payable at maturity without interest[9] and to issue its own obligations in payment of loans in lieu of cash. The public debt laws were amended to permit Treasury borrowing for the purchase or redemption of R.F.C. securities. While the law thus gave these new obligations a high investment standing, it specifically denied them status as eligible loan collateral under the Federal Reserve Act.[10] Guaranteed issues were not to serve as a basis for expanding the note issues of the Federal Reserve banks.

II

Although the guaranty device was of little practical importance in the actual operation of the R.F.C. during its first years of activity,[11] Congress was not inclined to abandon a precedent. The

[6] See statement by Mills in *Hearings on S.1*, p. 42. Mills, who wanted easier bank borrowing, was opposed by Senator Glass, who believed that there might be too much bank borrowing if $2,000,000,000 of new securities were dumped "in the lap of the Federal reserve system" (*ibid.*).

[7] Use of Treasury facilities was not specifically approved until adoption of an amendment requiring the proceeds of security sales to be deposited with the Treasury and credited to the account of the R.F.C. (47 Stat. L. 715, sec. 209 [July 21, 1932]).

[8] The total amount was originally limited to $1,500,000,000 (*plus* capital stock of $500,000,000); but numerous amendments raised the total to an indefinite amount by authorizing the corporation to borrow sums necessary for particular purposes (see below, p. 570).

[9] This authority seems never to have been used, except in the financing of gold purchases in 1933 and 1934.

[10] 47 Stat. L. 9, sec. 9; see below, pp. 565–66 and n. 26.

[11] Table 1 (see below, p. 569).

political usefulness of indirect indebtedness incurred for any apparently constructive purpose was just beginning to grow upon the legislative imagination when the Home Owners' Loan Act was passed in June, 1933.[12] While the members of both houses were overwhelmingly in favor of President Roosevelt's proposal to refinance mortgages for distressed homeowners, some of them felt that the financial responsibility for such an undertaking might be staggering but should not appear to be so. In order to minimize the obligation of the United States, Congress authorized the sale, or *exchange* for mortgages, of Home Owners' Loan Corporation obligations unconditionally guaranteed by the United States *as to interest only*. The borrowing provisions of the R.F.C. Act were thus repeated, with two major differences: emphasis upon the mortgage-exchange feature as an administrative device and the limitation of Treasury liability to interest.

During the debate on the H.O.L.C. Act, many doubts were cast upon the validity of the bill's underlying assumption—that the mortgages for which bonds were to be exchanged were so uncertain of collection that holders would be more than willing to accept bonds bearing guaranteed interest at a rate of 4 per cent.[13] Senator Bulkley of Ohio argued that such bonds would probably not be worth par and, therefore, could not be readily exchanged for mortgages amounting to as much as 80 per cent of the value of the mortgaged property, as provided in the bill.[14] That such issues were not readily exchangeable was soon proved by experience, and the corporation's directors asked Congress to guarantee the principal as well as the interest.[15] Supporters of the proposal contended that a full guaranty would (1) make possible a substantial reduction in the rate of interest, (2) facilitate the exchange of bonds for mortgages, and (3) add nothing to the govern-

[12] Public Law No. 43 (73d Cong., 1st sess.; June 13, 1933).

[13] The H.O.L.C. and certain other agencies subsequently organized were forbidden by law to pay more than 4 per cent interest on their securities. The limitation did not apply to the R.F.C.

[14] *Congressional Record* (73d Cong., 1st sess.; June 5, 1933), p. 4984.

[15] *First Annual Report of the Federal Home Loan Bank Board, from Date of Creation to December 31, 1933* (Washington, 1934), p. 49.

ment's real liability. The proposal became law on April 27, 1934, less than a year after the original H.O.L.C. Act had been passed.[16]

In the meantime the problem of credit relief for farmers was causing some concern. Under the act of May 12, 1933,[17] Congress had sought to meet the difficulty by authorizing loans to be made out of the proceeds of sales of interest-guaranteed, farm-loan bonds; but these had never been placed on the market, because they could not be sold at par as required by the law.[18] The federal land banks were powerless to aid farmers without the support of the federal government, because they could not sell bonds on the statutory-yield basis and could borrow from the R.F.C. only small amounts, for which satisfactory collateral could be provided. It was to be expected, therefore, that Congress would enact legislation authorizing aid to farmers comparable to that offered to homeowners. There was little debate over the various provisions of the bill to create the Federal Farm Mortgage Corporation; and it was passed in January, 1934, with all the major borrowing features subsequently duplicated in the amended H.O.L.C. Act. The interest guaranty was abandoned in favor of a full guaranty.[19]

Congress was not content to restrict the employment of guaranteed securities to major "bailing-out" operations but used them for purposes which were incompatible with the original theory of recoverable debt. In the first place, established agencies were deprived of independence and, therefore, of responsibility through the operation of a multitude of congressional enactments which

[16] Public Law No. 178 (73d Cong., 2d sess., April 27, 1934).

[17] 48 Stat. L. 41, sec. 21. The act authorized bonds in the amount of $2,000,000,000 with guaranteed interest not to exceed 4 per cent. After five years the bonds were to be accepted at par when tendered for the purpose of discharging the unpaid balance of any mortgage loan.

[18] U.S. Congress, H.R., Committee on Agriculture and Forestry, *To Refinance Farm Mortgages* (Rept. No. 279 [73d Cong., 2d sess., 1934]), p. 2. While these bonds were not marketed, some were pledged as collateral for loans from the R.F.C. and other agencies (see U.S. Congress, Senate, *Financial Statements of Certain Government Agencies* [S. Doc. No. 172 (76th Cong., 3d sess.; Washington, 1940)], Part I, XVII, p. 198).

[19] Public Law No. 88 (73d Cong., 2d sess.; January 31, 1934).

required specific loans and allocations to be made.[20] Indirect spending was the result. Second, the guaranteed security was used as a means of paying contingent liabilities. Both the National Housing Act of 1934[21] and the United States Maritime Act amendments of 1938[22] authorized the issuance of guaranteed securities to discharge insurance claims on defaulted home and ship mortgages by the exchange of obligations rather than by cash settlement. Finally, Congress authorized guaranteed borrowing to finance long-term capital improvements under the United States Housing Act of 1937[23] and to provide additional financial implementation for the government's agricultural program under an act of 1938.[24] Both enactments contemplated subsidies: those under the Housing Act were planned, while those under the commodity-loan program were incidental to the policy of making nonrecourse loans on the security of staple commodities valued at some percentage of parity. The latter legislation freed the R.F.C. of responsibility for providing funds for commodity loans and, at the same time, provided a system whereby the Commodity Credit Corporation's capital impairments would be restored each year, if necessary, out of Treasury funds.[25]

These developments impaired the validity of the major premise

[20] The R.F.C. was most affected by this practice; but, since the bulk of the corporation's debt was owed to the Treasury, little guaranteed borrowing was actually affected. Legislation was required in order to remove such loans from the category of collectible items on the books of the R.F.C. and the Treasury (52 Stat. L. 79 [February 24, 1938]).

All other agencies authorized to sell guaranteed securities were also empowered to borrow from the Treasury.

[21] Public Law No. 479 (73d Cong., 2d sess.; June 27, 1934).

[22] Public Law No. 705 (Title XI) (75th Cong., 3d sess.; June 23, 1938).

[23] Public Law No. 412 (75th Cong., 1st sess.; September 1, 1937).

[24] Public Law No. 442 (75th Cong., 3d sess.; March 8, 1938).

[25] Under a so-called collateral-trust agreement, the R.F.C. had tried to give the C.C.C. power to borrow directly from banks by guaranteeing the agency's obligations. The above-mentioned legislation ended the relationship, except for one instance of emergency borrowing (see statement by Jesse Jones, federal loan administrator, Senate, Committee on Banking and Currency, *To Continue the Functions of the Commodity Credit Corporation . . . . , Hearings on S. 1084* [76th Cong., 1st sess.; Washington, 1939], p. 23).

on which the guaranteed debt was originally based: that it differed from the direct debt by reason of its recoverability without resort to taxation. There were, however, certain technical differences between the two debt categories—differences which tended to diminish with the progress of legislative adjustment—as shown in this brief legislative survey. In summary, the investment characteristics of guaranteed securities included the following: (1) They were fully and unconditionally guaranteed by the United States as to both principal and interest and were secured primarily by the assets of the agencies in whose name they were issued. If they were not redeemed at maturity by the issuing agency, the Secretary of the Treasury was authorized to redeem them out of the proceeds of Treasury borrowing and to succeed to all the rights of former holders against the assets of the issuer. A general appropriation provision authorized the expenditure of funds for this purpose. (2) Any such securities might be bought and sold by the Reserve banks without regard to maturity, but only in the open market.[26] (3) Bonds of the H.O.L.C. and the Federal Farm Mortgage Corporation were eligible, under certain restrictions, as collateral security for fifteen-day borrowings from the Reserve banks,[27] but not as security for issues of Federal Reserve notes.[28] (4) Originally no guaranteed securities were acceptable as collateral for ninety-day advances from the Reserve banks.[29]

[26] *The Federal Reserve Act, as Amended to October 1, 1935* (Washington, 1935), sec. 14-3. The restrictions upon discount and open-market eligibility contained in sec. 9 of the R.F.C. Act were never changed; but under subsequent legislation the Reserve banks were permitted, under certain circumstances, to conduct open-market operations with obligations of corporations in which the United States was a majority stockholder (48 Stat. L. 51, sec. 43 [*a*] [May 12, 1933]).

[27] Federal Reserve Act, sec. 13-S.

[28] The power of the Board of Governors of the Federal Reserve System to admit the use of *direct* obligations of the United States as collateral security for Federal Reserve notes, if deemed to be in the public interest, was originally to have expired June 30, 1939 (50 Stat. L. 23); but it has since been twice extended and is now scheduled to expire June 30, 1943 (Public Law No. 141 [77th Cong., 1st sess.; June 30, 1941]).

[29] This statement requires qualification. While sec. 2(*b*) (Board of Governors of the Federal Reserve System, *Regulation A*, effective October 1, 1937) restricts collateral eligibility for 15-day advances to H.O.L.C. and F.F.M.C. bonds and to cer-

Certain other provisions contained in the federal statutes and in state permissive legislation enhanced the investment status of guaranteed securities. Under the federal law all such issues were originally exempt, both as to principal and as to interest, from federal, state, and local taxation, except surtaxes, estate, gift, and inheritance taxes;[30] and these exemptions continue on all outstanding issues except those affected by the Public Debt Act of 1941.[31] They were also eligible as legal investments for national banks and other institutions which are regulated or controlled by the national government and as security "for all fiduciary, trust, and public funds, the investment or deposit of which shall be under the authority or control of the United States."[32] Many states, likewise, made them eligible as investments for savings banks and trust companies and authorized special classes of institutions to invest in the securities of particular agencies.[33]

III

Up to the end of June, 1941, all the agencies empowered to issue guaranteed securities, with the exception of the Tennessee Valley

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tain other securities which are not guaranteed, secs. 2(*c*) and 2(*d*) authorize the use of such securities as collateral for advances at a rate not less than ½ of 1 per cent higher than the highest rate applicable to discounts for member-banks under secs. 13 and 13(*a*) of the Federal Reserve Act. Notes so secured might be dated for 4 months (*Federal Register, 1937*, II, Part 2, 1996–97). Thus the penalty-rate idea deleted from the original R.F.C. bills was finally given limited applicability as an emergency measure.

[30] F.H.A. debentures were originally made taxable to the same extent that insured mortgages would have been taxable in the hands of the lender, but the law was amended to provide the same exemption privileges extended to other guaranteed securities (52 Stat. L. 14, sec. 204[*d*] [February 3, 1938]). Under the Public Debt Act of 1941, interest upon and gain from the sale of such debentures shall have no exemption under federal tax laws except when issued on contracts entered into prior to March 1, 1941 (see U.S. Treasury, *Statement of the Public Debt of the United States* [June 30, 1941], p. 3).

[31] Public Law No. 7 (77th Cong., 1st sess.; February 19, 1941).

[32] R.F.C. Act, sec. 9. This wording is contained in all the bond-guaranty sections.

[33] Building and loan associations and insurance companies, e.g., were authorized by many states to invest in H.O.L.C. bonds (Ruth G. Weintraub, *Government Corporations and State Law* ["Studies in History, Economics, and Public Law," No. 448 (New York: Columbia University Press, 1939)], pp. 122, 139–40).

Authority[34] and the United States Maritime Commission, had sold or exchanged varying amounts of obligations as shown in Table 1. At the beginning of 1934 the amounts outstanding were negligible; the R.F.C. had been financed for the most part out of general Treasury borrowing, and emergency home and farm mortgage refinancing had not yet begun. But, after the bond-guaranty legislation of January 31 and April 27, 1934, the total issues of the F.F.M.C. and the H.O.L.C. increased rapidly, reaching an aggregate of approximately $4,500,000,000 by June 30, 1936. Subsequent financing for these two agencies was almost entirely for refunding purposes. The only other significant amount outstanding during the period prior to the close of the fiscal year 1936 was issued by the R.F.C. in exchange for bank securities under the bank-rehabilitation program of 1933 and 1934.

The decline in the total guaranteed debt after June, 1936, was short lived. From June, 1937, through June, 1941, all decreases in the various categories were more than offset by the addition of debts of new agencies, by the shifting of R.F.C. debt from the Treasury account to the market,[35] and by new R.F.C. borrowing to finance various lending activities, including those of recently organized defense subsidiaries.[36] The aggregate of these borrowings increased the total guaranteed debt outstanding on June 30, 1941, to more than $6,300,000,000.[37] Thus, with the merging of

[34] The 1935 amendments to the T.V.A. Act authorized the issuance of a limited amount of guaranteed securities to finance the purchase of existing power-distribution facilities (49 Stat. L. 1078, sec. 9 [August 31, 1935]).

[35] *Federal Reserve Bulletin*, XXVI (January, 1940), 2; XXVII (April, 1941), 297. While this procedure did not affect the net indebtedness of the United States, it reduced the upward pressure on the general debt and made the budget appear to be more nearly in balance than it actually was. It is apparent that the bulk of the R.F.C. debt was at first reflected in the direct debt and then shifted gradually to the guaranteed-debt account.

[36] These subsidiaries include the Rubber Reserve Company, Metal Reserve Company, Defense Plant Corporation, Defense Supplies Corporation, and Defense Homes Corporation. The lending powers of the R.F.C. itself were expanded to enable it more effectively to promote defense industry (Public Law No. 664 [76th Cong., 3d sess.; June 25, 1940]).

[37] U.S. Treasury, *Statement of the Public Debt of the United States* (June 30, 1941), p. 3.

TABLE 1*

Outstanding Guaranteed Liabilities of the United States, June, 1934—June, 1941
(In Thousands of Dollars)

Year (as of June 30)	H.O.L.C.		F.F.M.C.		R.F.C.		C.C.C.		U.S.H.A.		F.H.A.	Total Amount
	Amount	Percentage of Total	Amount	Percentage of Total	Amount	Percentage of Total	Amount	Percentage of Total	Amount	Percentage of Total	Amount	
1934	$ 747,006	57.6†	$ 313,488	24.1	$ 235,797	18.1	.....	.....	.....	.....	.....	$1,296,291
1935	2,766,577	65.0	1,233,090	29.0	250,989	5.9	.....	.....	.....	.....	.....	4,250,656
1936	3,070,885	64.5	1,431,137	30.0	252,602	5.3	.....	.....	.....	.....	.....	4,754,624
1937	3,007,050	64.1	1,431,257	30.4	256,192	5.4	.....	.....	.....	.....	$ 91	4,694,590
1938	2,969,429	60.6	1,418,742	28.9	299,073	6.1	$206,428	4.2	.....	.....	592	4,894,264
1939	2,935,456	54.8	1,388,255	25.9	821,969	15.3	206,428	3.8	$114,811	2.1	2,672	5,354,780
1940	2,634,809	47.6	1,269,388	22.9	1,097,166	19.8	406,798	7.4	114,159	2.1	7,501	5,529,821
1941	2,410,336	37.9	1,270,665	20.0	1,741,458	27.4	696,258	10.9	226,258	3.6	17,354	6,362,329

* Source: U.S. Treasury, *Statement of the Public Debt*, for dates indicated. Certain interest-guaranteed bonds which were outstanding in 1934 but retired before the end of the year are not included in the tabulation. All totals include interest, but they do not include various amounts of guaranteed obligations which were purchased by the Treasury and are reflected in the direct debt.

† This figure is corrected to include amounts not shown in the *Statement of the Public Debt* of this date.

one emergency into another, guaranteed issues increased both in amount and in variety.

Much latitude was allowed for the exercise of administrative wisdom in the management of agency debts. This must always be so; but, since agency borrowing represents the decentralization of a vital governmental function, it is desirable that there be safeguards against possible abuses. In this respect the statutory standards were not entirely satisfactory. The laws usually contained (1) specific limitations on amounts to be borrowed, (2) maximum rates of interest, and (3) provisions requiring the approval of the Secretary of the Treasury on all issuing transactions. On the other hand, many statutes stipulated only general maxima,[38] and none specified a method by which the debts should be retired. Both the H.O.L.C. and the F.F.M.C. were authorized to purchase their own securities in the market,[39] but only the H.O.L.C. was specifically directed to retire and cancel its bonds "as rapidly as the resources of the Corporation will permit."[40] The United States Housing Act gave the Authority permission to use idle funds for the retirement of securities, but in no instance was a retirement *procedure* prescribed by statute.[41]

The veto power of the Secretary of the Treasury enabled his agency to exercise considerable control over the financial operations of the various agencies, with the result that there was a wholesome uniformity of management policy and an avoidance of

[38] Many statutes amending the R.F.C. Act authorized the corporation to borrow as much as necessary for some particular purpose. The H.O.L.C. Act provided, in addition to a blanket maximum, that no bonds were to be issued in excess of assets, including the amounts to be obtained from the sale of such bonds (48 Stat. L. 644 [April 27, 1934]).

[39] The purchases of the H.O.L.C. were to be at prices not exceeding par, but the purchase prices of F.F.M.C. bonds were not so limited (48 Stat. L. 644, sec. 1(*a*) [April 27, 1934]).

[40] 48 Stat. L. 132, sec. 4(*k*) (June 13, 1933).

[41] The board of directors of the H.O.L.C. established a method by resolution. Collections of principal on outstanding loans were directed to be impounded in a "reserve for the retirement of bonds," to be used exclusively for retirement purposes. It was to be held as a sinking fund and invested in the securities of the United States (U.S. Congress, H.R., Committee on Banking and Currency, *To Guarantee the Bonds of the Home Owners' Loan Corporation, Hearings on H.R. 8403 [S. 2999]* [73d Cong., 2d sess.; Washington, 1934], p. 50).

conflicts with Treasury operations.[42] Where long-term bonds were issued, liberal use was made of the call feature; and numerous refundings made possible substantial reductions in interest burdens.[43] Similarly, retirements were facilitated through exchange for outstanding obligations of short-term securities to be taken up in small amounts as funds became available. Thus the management avoided such troublesome problems as idle funds and inflexible redemption schedules.

Although there were no legal inhibitions against the issuance of long-term securities by any agency in the group, only the H.O.L.C. and the F.F.M.C. were financed to any considerable extent by this method.[44] Short-term securities bearing 1 per cent or less were used extensively, even for financing capital loans with a maximum legal duration of sixty years under the United States Housing Act.[45] While the first notes issued by the R.F.C. in exchange for securities under the bank-rehabilitation program bore 3 per cent interest or more, they were subsequently refunded at progressively diminishing rates and shorter maturities. In October, 1938, the

[42] To facilitate administration in the Treasury Department an interdepartmental loan committee was organized (see President's Committee on Administrative Management, *Fiscal Management in the National Government* [Washington, 1937], p. 13).

[43] The first issue of H.O.L.C. bonds, bearing 4 per cent interest and maturing in 1951, was made callable at any time after issue. After passage of the guaranty act of 1934, the corporation was able to offer in exchange new bonds bearing a lower rate of interest and to call in those not voluntarily exchanged (48 Stat. L. 644 [April 27, 1934]; *Second Annual Report of the Federal Home Loan Bank Board, Covering Operations . . . . from Date of Creation through December 31, 1934*, p. 81). After a number of refunding operations the corporation's board of directors was able to report that the average rate of interest on all outstanding securities had been reduced from approximately 2.53 per cent to a little less than 2.1 per cent (*Seventh Annual Report of the Federal Home Loan Bank Board for the Period July 1, 1938—June 30, 1939*, p. 150).

[44] The debentures of the F.H.A. were to mature three years after the first of July following the date that the mortgage would have matured, but by administrative determination the agency has made its securities callable at option at par and accrued interest (Federal Housing Administration, *Rules and Regulations under Section 203, as Amended June 3, 1939* [F.H.A. Form No. 2010] [Washington, 1939], p. 17).

[45] A late series of U.S.H.A. notes, however, were five-year notes bearing 1¼ per cent interest. The borrowing of this agency has been used to meet the needs of local housing authorities during the period of construction (*New York Times*, October 30, 1939, p. [1]).

Treasury refinanced approximately $300,000,000 of 1½ per cent R.F.C. notes through an issue of three-year noncallable notes bearing ⅞ per cent.[46] The whole of the government's contingent liability for the C.C.C. (including only outstanding notes of the corporation) consisted of short-term notes, maturing in two years or less and issued either to take up unpaid producers' notes held by banks or to exchange for outstanding obligations of the corporation. Because of the agency's inability to sell the commodities which constitute the security for unpaid loans, it was necessary to reissue notes from time to time. The growth of the Credit Corporation's debt to nearly $700,000,000 on June 30, 1941, is chargeable not to managerial difficulties but to the congressional policy of restoring agricultural prices to levels equal to or in excess of parity.

On the whole, the management of guaranteed agency debts was good. Although the statutory standards and the machinery of control were inadequate in some respects, Treasury supervision provided a desirable element of centralized control. Guaranteed securities shared the general downward trend in interest rates on government borrowing, and this result was achieved with the aid of opportune refundings and careful manipulation of maturities. If there is serious fault, it lies with Congress for having begun an experimental type of borrowing which, in the beginning, could result only in confusion and excessive cost.

IV

The traditional criterion of proper debt policy is economy. The issuance of long-term securities when interest rates are high or of too large a proportion of short-term securities which may have to be funded at higher rates is a situation any borrower should ordinarily seek to avoid in order to minimize the dead-weight cost of borrowing. Whether cost ought *always* to guide the management of federal debt operations is now a matter of doubt. Borrowing operations might, under some conditions, be employed for a pur-

[46] The increase of more than $700,000,000 in the total amount of guaranteed securities at the end of 1939 was due almost entirely to additional sales of such notes (*Commercial and Financial Chronicle*, CXLVII [July 9, 1938], 353; CXLVIII [February 4, 1939], 659; CXLVIII [February 18, 1939], 959).

pose which is largely regulatory.[47] Indeed, operations of the Treasury, along with those of the federal lending agencies, must have important effects not contemplated in borrowing primarily for revenue. But where there is no specific regulatory purpose, it must be presumed that the relative cost of different types of borrowing will be an important factor in determining choice.

Borrowing on guaranteed securities did not meet either condition. As for economy, the presumption at the outset would have been against the introduction of a new type of security into the federal system which could be regarded only as "just as good" as direct Treasury issues. The initial policy of financing the operations of the R.F.C. out of general Treasury borrowing was, in part, a recognition of the uncertainty that would attend a new borrowing experiment.[48] The interest guaranty, as a federal borrowing medium, was painfully uneconomic at the outset. Although the only series of bonds issued under the original H.O.L.C. Act bore a nominal interest rate of 4 per cent, those which filtered into the general market sold at a heavy discount. Since these bonds were originally exchanged for mortgages at par, the discount had little to do with the cost of borrowing to the federal government, but it severely handicapped the refinancing program.[49] Even after the adoption of a guaranty of both principal

[47] Marriner S. Eccles, chairman of the Board of Governors of the Federal Reserve System, has recommended that a special series of Treasury securities, not eligible for purchase by banks, should be sold to business firms to prevent the use of idle balances for purposes which might be inflationary (*Federal Reserve Bulletin*, XXVII [June, 1941], 509).

[48] One official explained that the major reason for the choice was uncertainty as to the magnitude of the demands that would be made upon the corporation for loans.

[49] The failure of Congress to authorize the issuance of bonds which would command the highest investment rating worked a hardship on many mortgagees. Holders of mortgages frequently tried to exact the difference between par and the selling price of the bond from the debtor by requiring a cash payment, a secured note, or a mortgage on other property (*Hearings on H.R. 8403 [S. 2999]*, pp. 38–54). To meet this problem the corporation publicized a resolution which declared such extortions to be in violation of the criminal sections of the Act (statement by H. Russel, general counsel of the H.O.L.C., in *ibid.*, p. 51). In general, the courts held that such contracts were contrary to public policy and were, therefore, unenforcible (e.g., *Chaves County Building and Loan Association* v. *Hodges*, 59 P [2d] 671; 40 N.M. 326 [1936]).

and interest, such securities continued to bear higher yields than Treasury issues with comparable tax status and call dates. Sample quotations on H.O.L.C. and F.F.M.C. bonds during recent years show yields to date of call ranging from $\frac{1}{10}$ to more than $\frac{1}{2}$ of 1 per cent greater than those of Treasury issues with call dates differing by no more than fifteen days.[50] The wide variations in the yield differential were due in part to arbitrage transactions by large investors; but the apparent permanence of the higher yield suggests that a legal doubt concerning the government's true liability operated to the disadvantage of guaranteed issues. In spite of early official reassurances,[51] the conversion of outstanding issues into direct obligations appeared to be requisite if yields on the two types were to be equalized.

The guaranteed security did not prove in practice to be either an essential or a beneficial implementation of administrative power. Control over the sources of public funds is not automatically related to control over their disbursement. Only the latter is necessary to the effective operation of governmental business units; and, if this condition is met, the source of operating funds is a matter of indifference to administration. Obviously, there are possibilities of conflict between the Treasury as a controlling authority and the disbursing agencies. But, as noted above, the R.F.C. operated with general funds for several years, and there is no evidence that the Treasury interfered with its lending policies or procedures. While the logic of putting maximum responsibility upon the agencies themselves is unanswerable, such an end is not to be achieved by abandoning all restraints upon borrowing which is essentially public in character. Nor did the guaranty device involve in practice the elimination of centralized control. The law required the Treasury to perform so many services related to issue procedure that the agencies were hardly less restricted than they

[50] See statement by Secretary Morgenthau, *New York Times*, October 17, 1941, p. 33, cols. 6–7.

[51] The attorney-general issued an opinion stating that the Treasury would become liable for payment of principal and interest at maturity if the issuing agencies were unable to pay and that payment by the Treasury would not depend upon the institution of any prior legal proceeding by the claimant. Thus payment was guaranteed, but not collection (38 Op. Atty. Gen. 75–77 [September 14, 1934]).

would have been if all funds had been allocated out of general revenue. Where securities were issued and exchanged for mortgages or other private obligations, lending was facilitated by the exchange method and not by the guaranty. Direct Treasury issues would have served the purpose as well. They will serve well now without imposing new and undue restraints upon administrators.

Indirect borrowing was unfortunate on several scores. The experience may be summarized as follows: (1) The guaranteed security became a too convenient instrument of compromise. The availability of funds not reflected in the direct indebtedness of the United States eased the political problem of providing an ever increasing number of lending services[53] and incidentally facilitated postponement of debt-limit revision. (2) With the multiplication of the uses to which guaranteed securities were put, including some which contained elements of subsidy, the term "self-liquidating" became increasingly inapplicable to a debt which originally was to have cost the taxpayers nothing. (3) The interagency juggling of funds, either under statutory allocations or under administrative determinations, confused the fiscal position of the federal government by overstating the liquidation possibilities of assets held either as Treasury or as agency investments. (4) With the enactment of new legislation designed to enhance the acceptability of guaranteed issues, the investment features of guaranteed and direct securities became increasingly similar, but the cost disadvantage of the former was never entirely removed. (5) The distribution method changed from the system of exchange against private obligations to sales in the market, thus negating any pretended administrative advantages of guaranteed securities.

The new policy of providing all funds out of general revenues finds even stronger support in present financial problems than in the negative case against indirect borrowing. In the first place, all the potentialities for the management of borrowing to minimize inflation lie in strict Treasury control and not in a decentralized

[53] This aspect of the development of lending organization is even more striking when constant liberalization of the law is considered along with the creation of new agencies.

system. Considering the magnitude of aggregate requirements for all purposes, this aspect of debt management is of paramount importance.[53] A single co-ordinated demand will serve to maximize borrowing efficiency; the allocation of general funds to the agencies as needed will be only a matter of bookkeeping. While the old system of Treasury supervision of agency indebtedness provided considerable control, the new policy will enable the Treasury to time its borrowing without the embarrassment of separate agency demands. Anticipating requirements for lending functions should produce no new problems. In the second place, any possible economy due either to the technique of borrowing or to normal yield differentials will be achieved through direct borrowing. If there are valid reasons for departures from the economy principle in federal finance, no such reasons appear applicable to the use of guaranteed securities. Finally, the new policy will result in overstatement, rather than understatement, of total tax-supported indebtedness when offsetting values are not considered. Such a result, however, will certainly be more conducive to the development of a satisfactory tax program than the concealment of deadweight indebtedness in guaranteed-security accounts.

The restriction of borrowing to direct issue does not necessarily mean the end of guaranteed securities in federal finance or of the activities which they supported. The statutory provisions under which those obligations were issued have not been repealed, and the cessation of issue was possible only because the law authorized direct issue as an alternative procedure. Secretary Morgenthau, in advising a congressional committee of the contemplated change of policy, asserted that it would make borrowing both easier and cheaper.[54] Assuming that this was no more true in 1941 than in

[53] While some agencies, the H.O.L.C. and the F.F.M.C. in particular, have ceased to require new borrowing, others can be expected to demand large amounts. Congress recently enacted legislation to increase the borrowing power of the C.C.C. from $1,400,000,000 to $2,650,000,000, in order that loans might be made to bring the "price and income of the producers of non-basic commodities . . . . to a fair parity relationship" (Public Law No. 147 [77th Cong., 1st sess.; July 1, 1941]). In October, 1941, the borrowing power of the R.F.C. was increased by $1,500,000,000 to finance an expansion of steel-production capacity (*New York Times*, October 14, 1941, p. 17, col. 3).

[54] See above, n. 50.

earlier years, it is pertinent to ask why the Treasury ever pursued any other policy. Certainly the political expediency of putting the growing federal indebtedness in the best public light and of minimizing regular budgetary requirements, combined with the reluctance of Congress to raise the legal limit upon direct indebtedness, were factors of primary importance. Obviously, the new policy, which promises ultimate conversion of outstanding guaranteed issues into direct obligations, does not affect the general debt position of the Treasury in so far as offsets are concerned. The agencies are to be held accountable for their borrowings as before, with the Treasury as creditor rather than the market buyers of securities.

Economically and administratively, indirect borrowing is indefensible; and to rationalize its use on the ground of political expediency is hardly complimentary to the legislative process.[55] Necessary though compromise may be to democratic adjustment, the guaranty device compromised nothing but the principles of good management. It did not establish any workable safeguards against operating losses to the federal government, nor did it contribute to the clarity of the Treasury's fiscal position. The present era of war borrowing should dispel any remaining illusions concerning the magic of substituting contingent for direct indebtedness for the sake of appearance. It is to be hoped that the guaranteed security in federal finance will be abandoned permanently.

[55] Some of the ideas developed in this connection are also applicable to the double budget, which, in a sense, is analogous to the dual debt. Similar ideas and circumstances have attended the development of both. A recent reversion to a kind of double budget in the Revenue Act of 1940, which provided for the creation of a special fund out of defense-tax revenues to be devoted to the retirement of defense indebtedness, was soon abandoned (54 Stat. L. 526 [Title III], sec. 301, repealed by Public Law No. 7 [77th Cong., 1st sess.; February 19, 1941]).

COMMODITY RESERVE CURRENCY: A CRITIQUE

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DURING the last two decades a number of proposals have been made relating variously to the storage of surplus commodities, the use of basic commodities as backing for money, and the stabilization of the price level.[1] The more pertinent of the ideas contained in these proposals have recently been synthesized in a plan for a commodity reserve currency, whereby monetary status would be given a composite group of primary commodities.[2] Increasing efforts have been made to bring this plan to the attention of the public, and it has received favorable attention from a number of professional economists.[3] It is

[1] Attempts to deal with the problems arising after the first World War (1914–18) were productive of several proposals; see the discussion of the Edison plan for a commodity dollar by Garet Garrett, *New York Times*, July 16, 1922; testimony of Sir Charles Fielding (December 31, 1924) and E. F. Wise (January 8, 1925) before the Royal Commission on Food Prices; Gilbert N. Lewis, "A Plan for Stabilizing Prices," *Economic Journal*, March, 1925; D. H. Robertson, *Banking Policy and the Price Level* (London, 1926), pp. 96–99.

[2] The most detailed analysis of the plan is presented by Benjamin Graham in his book, *Storage and Stability* (New York, 1937). The plan was first presented in Mr. Graham's article, "Stabilized Reflation," *Economic Forum*, Vol. I, No. 2 (spring, 1933). The most recent analysis by Mr. Graham is "Storage and Stability—a Plan for Monetizing the Commodity Surplus," in *A Forum on Finance* (New York, 1940).

[3] The following articles deal with the Graham proposal or phases of a similar idea: Frank D. Graham, "The Primary Functions of Money and Their Consummation in Monetary Policy," *American Economic Review Supplement*, March, 1940, and "Transition to a Commodity Reserve Currency," *American Economic Review*, September, 1941; Hans R. L. Cohrssen, a review of *Storage and Stability* in *Dynamic America*, March, 1938; Richard A. Lester, *Monetary Experiments* (Princeton, 1939), pp. 299–305; Paul Einzig, *Monetary Reform: Theory and Practice* (London, 1936), pp. 201–9; Elmer C. Bratt, *Business Cycles and Forecasting* (Chicago, 1940); John Maynard Keynes, "The Policy of Government Storage of Foodstuffs and Raw Materials," *Economic Journal*, September, 1938; J. M. Clark, "The Proposal for a Composite Commodity Currency," *Economic Essays in Honour of Gustav Cassel* (London, 1933), pp. 75–87; George de Bothezat, *The Depression: Its Real Causes and the Remedy* (New York, 1933).

proposed in the following pages to review the theoretical bases of the plan and to examine the effects which might be expected to follow the establishment of such a currency.

THE PLAN

The basic elements of the plan for a commodity reserve currency may be summarized briefly. First, a composite unit would be formed consisting of a carefully weighted group of basic raw materials[4]—such units to be acquired and stored by the state "when there is a surplus of these commodities in the aggregate."[5] Secondly, this composite unit would be accorded monetary status by providing for two-way convertibility: paper currency would be issued in exchange for composite units, and composite units would be exchanged for paper currency. Thirdly, this free convertibility would provide the basis for automatic regulation of the supply of basic money. Expansion of the supply of such money would be achieved by the surrender to a central monetary authority, corresponding to the mint, of multiples of the composite unit, and contraction of the supply would be brought about by the presentation of notes in exchange for commodities in amounts determined by the composite unit.[6] Finally, the commodities acquired and stored by the state would provide a reservoir to be drawn upon in emergency, such as war or drought.

There is a close analogy between the mechanism of this plan and that of the gold standard in that it would accord to a composite group of basic commodities exactly the same monetary

[4] Benjamin Graham includes the following twenty-three commodities: corn, wheat, sugar, oats, coffee, barley, rye, cocoa, cottonseed oil, cotton, wool, silk, copper, lead, tin, zinc, petroleum, hides, rubber, cottonseed meal, flaxseed, tobacco, tallow (*Storage and Stability*, pp. 53–54). Frank D. Graham states that "I would be inclined greatly to enlarge the list of commodities in the composite unit used as a monetary standard as compared with what Mr. Benjamin Graham, in the interest of administrative convenience, has suggested" (*American Economic Review Supplement*, March, 1940, p. 13).

[5] Benjamin Graham, *Storage and Stability*, p. 49.

[6] Currency would be issued whenever the aggregate market value of the component items included in the unit was such as to permit the purchase of the various units at a cost slightly under their standard, or "coinage," value, and commodity units would be redeemed whenever the aggregate market value of the component items was slightly above the standard value.

status as was given to gold under the classic gold standard. Essentially, the two standards differ only in that specified quantities of basic raw materials in the composite unit would replace a specified number of grains of gold in the dollar.

PURPORTED ADVANTAGES OF THE PLAN

Among the various advantages which, it is maintained, might be expected to result from the adoption of the plan are several which merit especial attention. First, it is claimed that the plan would operate automatically in the same sense and in substantially the same way as the free gold standard. Secondly, it is contended that the monetizing of a composite commodity unit would stabilize the collective price of the commodities included in the unit in exactly the same manner as the fixed mint price stabilized the price of gold. (It should be noted, in this connection, that the prices of the individual commodities would be free to fluctuate within the limits set by stabilization of the composite unit; but it is argued that the stabilization of the collective price of the commodities included in the unit would have a powerful stabilizing effect on the general level of prices.) Thirdly, the assurance of a stable price for the composite unit in a period when other prices were declining would, presumably, tend to stimulate production of the commodities included in the unit and benefit producers of those commodities, just as under the free gold standard a fall in the price level was assumed to afford an immediate and considerable stimulus to the gold-mining industry. The stimulus afforded to a large segment of the national economy would be expected to provide a powerful impetus to general business activity. Fourthly, the building-up of a reservoir of basic agricultural materials is viewed as assuring at least a partial solution of the farm problem by providing an outlet for surplus products. This would be of particular importance during the period of transition to the plan but would, in addition, become operative during any period of depression and falling prices. This follows from the preceding point. Finally, the accumulation of raw materials as monetary reserves would involve the creation of stores which could be drawn upon in emergencies.

Before an attempt is made to pass upon the validity of these claims, certain problems pertinent to the merits of the plan itself will be examined; while primary emphasis will be directed toward its economic aspects, some recognition will necessarily be given to political considerations.

PROBLEMS RELATING TO THE DOMESTIC MONETARY ASPECTS OF COMMODITY RESERVE CURRENCY

TRANSITION

The introduction of a new type of money may involve the replacement of all existing forms of currency, the substitution of the new currency for some of the existing forms, or merely the addition of the new currency to existing forms. The proponents of the plan assume the first of these alternatives to be the ideal policy, but they recognize that the supplanting of all forms of money with commodity reserve currency would meet with great opposition.[7] The second alternative—namely, the substitution of the commodity currency for existing forms of money—is also rejected except in so far as Federal Reserve notes may be replaced "to the extent that such notes are no longer needed."[8] By a process of elimination, then, the addition of the new currency to existing forms is offered as the principal method of effecting the transition to a commodity reserve currency system.

The points at issue in a discussion of the problems of transition may be clarified by keeping in mind the fundamental similarities between the commodity reserve system and the traditional gold standard. In order for a commodity currency, whether gold or commodity reserve currency, to function effectively it is not necessary, according to the theory, that all money be fully backed or

[7] In the *American Economic Review* for September, 1941, Frank D. Graham has undertaken to discuss the transition to a commodity reserve currency. Unfortunately, this article is also concerned with a number of other questions, including the general merits of the plan and issues relating to bank policy, and fails to shed as much light as might be hoped on the problems of transition.

[8] "The commodity-backed money is not intended to replace other currency—except Federal Reserve notes, to the extent these are no longer needed. It will be one more form of money added to the ten existing types. True, we have too many kinds already; but the addition of still another may be excused if thus we establish a sensible and helpful relationship between our currency structure and our national product" (Benjamin Graham, *Forum on Finance*, p. 177).

that the currency in circulation be limited to the basic type. It is essential, however, that the commodity currency constitute *a sufficient portion of the total to allow for any contraction and that all expansion be effected through the commodity currency*. The monetary supply would then be regulated by movements into and out of reserves. It is obvious that this method of adjustment represents an application of the principle of an uncovered issue, which was a characteristic feature of the gold standard as maintained in England. Transition on a scale such as this represents the minimum requirement that must be met under the plan as proposed.[9]

The first question to be considered in connection with transition of the scale indicated relates to the existing types of money, namely, gold and silver certificates, Federal Reserve notes, United States notes, and demand deposits. Any one or all of these might be retained as the uncovered issue, but the amount outstanding must either be fixed or be held to a fixed reserve ratio. If the transition to commodity reserve currency is to achieve its objectives, a strong and unified control over the other elements in the total circulating medium is essential,[10] for, otherwise, changes in the monetary supply might result from changes in any one of its components. Thus the effect of changes in the supply of commodity money might be negated by changes in the supply of other types of money.

Another issue relates to the time at which transition is effected. The most opportune time for inaugurating the new currency system would appear to be the beginning of a depression. The process of acquiring and storing commodities would obviously create a demand for basic raw materials. The contribution this would make toward solving the problem of surplus production, which has been described as the "real objective" of the plan,[11] would

[9] It may be noted in passing that transition on this minimum scale would reduce, as compared with transition on a less restricted scale, the time, expense, and inconvenience of establishing the system and likewise would relieve the technical problems of storage and costs. On the other hand, it would likewise limit the contribution it would make to the accumulation of emergency stocks and to providing an outlet for surplus stocks.

[10] Frank D. Graham, *American Economic Review*, September, 1941, p. 521.

[11] Benjamin Graham, *Storage and Stability*, p. 67.

presumably be greatest at the onset of a depression when demand would otherwise be declining. If an ensuing turn of the business cycle should reverse this process, it would become necessary to assure that any retirement of currency was confined to other forms of money. Otherwise, the completion of the cycle would return the currency structure to its original status, and the transition to commodity currency would have proved abortive.

OPERATION OF THE PLAN

The benefits of monetary reform may presumably be sought by way of either a managed monetary standard or an automatically operated standard. Recent monetary history seems to indicate a trend away from automatism toward management; but it can hardly be denied that, if the same benefits can be obtained under an automatic as under a managed monetary standard, the former is to be preferred. This preference is based in part on recognition of the difficulty of securing competent management by fallible human beings: difficult decisions must be made, frequently based upon inadequate information; administration may devolve upon incompetent officials; the temptation to pander to political considerations may overcome resistance; and public confidence may be shaken. One of the principal arguments advanced in support of the plan for a commodity reserve currency, therefore, is that it would operate automatically, once the commodities to be included in the composite unit were determined and their relative weights were established. As mentioned earlier, the pattern of automatism is that, whenever the aggregate market value of the component items included in the composite unit was slightly less than their standard value, currency would be issued; and, whenever the aggregate market value was slightly above their standard value, commodity units would be retired.

Since its alleged automatism occupies so prominent a place in the argument, it is necessary to call attention to the significance of certain further features of the plan. Advocates of an automatic system can hardly fail to be disturbed by the suggestions for (*a*) periodic revision of the unit, (*b*) substitution of futures for spot commodities under certain circumstances, and (*c*) the ab-

sorption of reserves into commodity uses in case of emergency.[12] Each of these features obviously represents a departure from automatism. Administrative decisions would be involved in choosing the time and method of revising the unit and the time for substituting futures for commodities. Resort to these measures would constitute the surrender of automatism and the introduction of monetary management.[13] The use of the basic raw materials composing the monetary reserve for emergency relief or military requirements is likewise incompatible with automatism. Moreover, the possibility that the basic monetary reserve could be dissipated whenever the need arose would seem to remove the very protection a monetary reserve is designed to afford.

Supporters of the present proposal are entitled to advocate, as they wish, monetary automatism or monetary management, but they are scarcely justified in marrying the two in this cavalier fashion. And they can scarcely expect to arouse great enthusiasm for a plan which preaches the virtues of an automatic standard, while containing elements categorically incompatible with automatism.

THE PROBLEM OF PRICE STABILIZATION

It is claimed that the commodity reserve currency plan would tend to stabilize the general price level by providing a mechanism for stabilizing the price level of the basic commodities included in the monetary unit. It is recognized, of course, that the plan, even though it provided stability for the composite unit price, would by no means prevent fluctuations in the prices of the components of the unit. The constituent prices would be free to vary with changing economic conditions; and, as the prices changed, the relative-value composition of the unit would change. Suppose, for example, that a bumper wheat harvest resulted in lower wheat prices. Under the commodity reserve currency system the decline in the price of wheat would cause additional commodity units to be monetized, until some or all of the prices of the other commodities

[12] A further impairment of the automatic feature would result from use of credit control and tariffs as a supplement to the automatic commodity plan (see below, pp. 589–90).

[13] The danger of political considerations intervening by these means is readily apparent.

in the unit had risen enough to offset the lower price of wheat. Thus commodity currency would probably prevent the price of any commodity from varying as widely as before, but the price fluctuations of any commodity would produce offsetting price fluctuations in some or all of the other commodities.

A question of very great significance concerns the effects upon the general price level and upon the prices of individual commodities and commodity groups comprising this total. Advocates of the plan maintain that the stabilization of the price of the composite unit would operate powerfully in the direction of stabilizing the general price level. It is by no means clear that this result would follow. Experience indicates that the general level of prices may rise at a time when the prices of many basic commodities are unchanged. Movements in the prices of basic raw materials unquestionably will affect the trend of the general price level; but, as long as the plan is designed to affect directly only one segment of the price structure, it seems logical to suppose that the forces now operating to influence prices would not be fully offset. For example, the potentialities of general price movements arising out of security speculation or real estate booms would remain. The adoption of the proposal might not prevent a recurrence of difficulties like those of 1929. But it must be acknowledged that the adoption of the plan would, without much question, prevent a drop as great as that which occurred in the thirties in the price level of the basic commodities included in the monetary unit. This, in turn, might moderate somewhat the decline in the general level of prices; but there is no reason to suppose that a worsening of business conditions such as took place at that time would have been entirely eliminated, unless one holds that the depression was caused solely by the fall in the prices of the basic commodities.

It is quite possible that prices of basic commodities, including those used as the monetary base, might remain stable at a time when other prices were tending to fall (or rise). In such an event, adherence to the commodity reserve currency plan obviously would not assure stability of the general price level. The claim that the proposed plan would guarantee stable prices is based upon the familiar confusion between a general price level and the

level of a particular group of prices. It would be fully valid only if it could be assumed that the prices of all commodities outside the monetary unit would behave in precisely the same manner as prices of commodities included in the unit. Commodity currency would contribute to price stability only to the extent that prices of the goods outside the unit followed a pattern identical with those in the unit. It must be concluded that a considerable degree of price fluctuation would be possible under the plan.[14]

A similar conclusion is reached as to the effect of commodity reserve currency upon secular price movements. Reductions in the real costs of production of all or most of the basic raw materials would tend to lead to a decline in their prices. If it is assumed that, under such conditions, measures are introduced to stabilize the price of the composite unit at the old level, the tendency would be to raise the prices of other commodities whose real costs of production had not declined. An attempt to stabilize the price of the composite unit would, under these circumstances, bring instability to the general price level.

If it is conceded that all segments of the price structure do not necessarily behave in the same manner, it follows that a measure designed to stabilize the price of a group of selected commodities would not necessarily guarantee stability of the general price level, any more than a stable wholesale price level during the twenties resulted in a stabilization of the entire price structure. The stabilization of the price of a group of basic commodities, as provided for by this plan, would not assure stability of the general price level.

THE PROBLEM OF CREDIT CONTROL

A further problem suggests itself in connection with the control of credit. The plan would presumably provide for automatic regulation of the supply of basic reserve money. Recent experience

[14] The foregoing discussion is not designed to condemn the plan for failing to assure perfection but rather to suggest a tempering of the somewhat extravagant expectations that seem to be cherished by some of its supporters. Cognizance may be taken, also, of other devices such as taxation and fiscal policy, which may be used to regulate price fluctuations. It seems probable, in fact, that these measures may be made to provide a quicker and more efficient method of dealing with this problem than that which commodity reserve currency offers.

with excess reserves has clearly demonstrated, however, that alterations in the volume of reserve money do not guarantee corresponding changes in total credit or even in demand deposits. There is no apparent reason for supposing that experience in this regard would be materially changed by the adoption of the plan.

It is to be noted that the proponents of the plan recognize that the plan does not assure adequate control of credit and that credit may expand or contract independently of changes in basic reserves. They admit the possibility that changes in the supply of commodity reserve currency may be offset by opposite changes in the supply of other forms of money, including demand deposits, or that an inflationary situation may arise unrelated to the new currency. What they fail to point out is that this admission invalidates the claims of automaticity, upon which the case for the plan so largely depends. As an escape from these recognized difficulties a strengthening of present measures for the control of credit has been recommended. It is proposed that all commercial banks be required to join the Federal Reserve System and that the Board of Governors of the Federal Reserve System be given power to fix at its discretion the reserve ratios required of member-banks, on the ground that "no really effective control of our monetary and banking system is possible without these measures."[15] It is scarcely to be doubted that some such extension of powers is essential to the attainment of the objectives specified in the plan. On the other hand, it may be suggested that, if Congress were willing to grant powers such as these, effective control of credit could probably be secured without the necessity of adopting a commodity reserve currency.

INTERNATIONAL ASPECTS OF THE PLAN

The importance of the international aspects of the plan is generally conceded by its proponents, but, whether intentionally or inadvertently, no attempt has been made to enlarge on the problems involved.[16] The need for further analysis along this line is

[15] Frank D. Graham, *American Economic Review*, September, 1941, p. 521.

[16] Frank D. Graham states that "the exchange value of a money freely convertible, both ways, in a composite of goods many of which would be freely traded internationally, could not possibly deviate very far from purchasing power parity howso-

indicated by the consideration that, unless composite commodity units can perform the function of an international monetary standard as did gold, the analogy with the classic gold standard in its international aspects breaks down.[17]

It seems altogether probable that commodity units having a similar composition are not likely to be adopted as a monetary standard to the same extent as was gold. Yet, unless this were to occur, the commodity reserve money could never fulfil the international function once performed by gold. If similar plans were adopted abroad with the difference that there was a considerable disparity in the proportions given to the individual commodities, the possibility would exist of corresponding divergences in general price movements in the different countries as a result of variations in the prices of the basic raw materials. Failing the establishment of fixed exchange rates, the plan must permit of fluctuating or controlled exchange rates, and thus the gold-standard type of automaticity would be lost.

It has been suggested that, in the event of a drop in world-prices, increased imports into the United States might be accepted in the form of composite commodity units or even of fractional parts of the unit, in exchange for gold, with the desirable result of stimulating business activity abroad and disposing of some of our excessive supply of gold. The suggestion has also been made that changes in the tariff might be employed to influence the importation of commodities included in the unit: in this way it would be possible to influence the quantity of money in circulation. These suggestions raise a number of disconcerting questions. First, even assuming our willingness to accept increased imports for storage purposes, can we assume that other countries would accept gold in

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ever computed, and this so far as international matters are concerned, is about all that we can ask." He concludes, however, that "the importance, and especially, the practicability, of stable exchange rates has now ceased to loom as large as it once did in the monetary picture" (*American Economic Review Supplement*, March, 1940, p. 15). Similarly, Benjamin Graham states that "since exchange rates are now largely a matter of control and agreement, the question is scarcely relevant to modern conditions" (*Forum on Finance*, p. 187).

[17] Since gold has now lost its position as an international standard, this hardly bears on the relative merits of the two proposals at the present time.

exchange at a reasonable valuation? Secondly, to what extent would it become necessary to subordinate our economic foreign policy to the objectives of the plan? Thirdly, is it likely that the monetary authority would be given the requisite degree of control over tariffs? Whatever the answers to these questions, it is self-evident that the advancement of these proposals constitutes an abandonment of the premise of an automatic monetary system. It can scarcely be denied also that the incorporation of such provisions would lay the plan open to grave political abuse.

From an economic standpoint the plan might conceivably be defended as likely to facilitate the repayment of international debts or the discharge of obligations incurred under the Lease-Lend Act. This, however, again involves the question of political feasibility.

IMPLICATIONS FOR AGRICULTURE

In its original formulation the plan proposed not only a sweeping monetary reform but also, in so doing, claimed to present a solution for the farm problem.[18] In recent discussions attention has largely been shifted to the monetary aspects—a fact reflected in the distribution of emphasis in this paper. But the application of the proposal to the farm problem is still significant. Grounds for the belief that the plan would contribute to a solution of the farm problem have already been suggested. It is significant that in a representative year agricultural commodities constitute approximately 70 per cent by value of the commodities included in the unit originally proposed by Benjamin Graham. The adoption of the plan in such form as this would obviously provide a significant demand for certain agricultural commodities, the majority of which are produced in the United States.

It is necessary, however, to consider the present proposal in relation to measures now in force for relieving the farm problem. Such a discussion is called for, first, in order that the relative virtues of this method of aiding agriculture may be evaluated and, secondly, in order that consideration may be given to the possible influence of existing agricultural policies upon the introduction and operation of the plan proposed.

[18] Benjamin Graham, *Storage and Stability*, p. 169.

The principal objective of the farm program of the last eight years has been to achieve parity prices for a limited number of farm products.[19] This objective has been sought through loans and crop reduction. The program is open to criticism on a number of grounds. Stabilization of the prices of individual commodities tends to distort demand and supply relationships. Shifts in production among the favored agricultural commodities and between these commodities and other products are not governed by market considerations alone. The influence of technological changes upon production costs of agricultural products tends to be ignored. The most significant of the criticisms is that the measures now in effect, even though they were first introduced under the guise of an agricultural adjustment act, are uniquely adapted to perpetuate maladjustments both in agriculture as a whole and in particular lines of agricultural production.

The plan for commodity reserve currency, if successful, would assure stability of the price of the composite unit. The prices of the individual commodities included in the unit, on the other hand, would be free to move within limits set by the price of the composite unit. Adjustment to "normal" demand and supply relationships would be possible, and unlimited production of basic agricultural commodities would be discouraged. Provision for the storage of surpluses would allow for the production of commodities in excess of market demand and would serve as a regulator of production to a greater extent than the limited ever normal granary provided for by existing legislation. The plan, therefore, seems to meet the principal criticisms leveled at the farm program of recent years.

Apart from the relative advantages as judged on purely economic grounds, a rather serious political problem suggests itself. It seems altogether probable that strong opposition would be exerted against replacing present farm legislation by a plan such as is proposed. Even if this did not completely block its introduction,

[19] Parity prices are the prices at which each farm product included in the program would have the same buying power over other products as they had in a previous period. Cotton, wheat, corn, and rice are adjusted to a 1909–14 price level, tobacco to a 1919–29 price level.

it is quite possible that, for reasons of expediency, an attempt would be made to superimpose the plan on the existing program. If this should happen, the prices of the particular commodities which were guaranteed parity would be relatively fixed. If such commodities were included in the composite unit, the downward rigidity of their prices would greatly hinder, and might make impossible, the satisfactory operation of the commodity reserve currency plan. For existing parity legislation premises a price floor under each of the selected commodities, whereas the proposal under consideration presupposes that prices of the individual commodities will fluctuate about a stable price level of the basic commodities. If the plan were in force, any legislation designed to control prices or production of specific basic raw materials would have greater repercussions than at present on the prices of the individual commodities included in the unit and would subject them to strong pressure by forces other than those of competitive demand and supply. Any measure that succeeded in establishing a high price for any one of the commodities included in the unit would automatically tend to depress the prices of the other commodities through the necessity of maintaining a stable price of the composite unit.

CONCLUSION

The adoption of commodity reserve currency has been advocated as a fundamental reform of our monetary structure. In some of the discussions of the plan the benefits mentioned as likely to accrue from its adoption are presented in terms suggestive of patent-medicine advertising.[20] The analysis presented above has cast doubt on many of the claims advanced. Not only is it questionable whether certain of the advantages would materialize, but, in addition, the transition to commodity reserve currency would assuredly give rise to a troublesome host of new problems.

Many of the advantages claimed for the plan rest upon its

[20] "The transition . . . . would . . . . be not only a painless prophylactic against future evils but also a useful therapeutic for those that were current" (Frank D. Graham, *American Economic Review*, September, 1941, p. 522). See also the literature of the Committee for Economic Stability.

fundamental similarity to the gold standard. There is grave reason to fear, however, that placing the basic commodities in the same position as gold, far from preserving all the virtues and none of the vices of the gold standard, would multiply the vices and compromise the virtues of the old gold standard. To concentrate attention on the price level of the basic commodities and the quantity of money is to disregard or minimize the importance of other elements in the price structure. The self-corrective price tendencies envisioned by the proponents of the plan may be admitted; a disturbing feature of the plan lies in the possibility that these tendencies might not become effective until after a considerable maladjustment had taken place.

From the standpoint of practical operation, the plan would be costly. A considerable amount of criticism thus far directed toward the proposal has centered on the costs of storing and handling the basic commodity reserves.[21] No accurate estimates of the costs that might be involved are, of course, possible, although current experience with stock piles and the storage of agricultural surpluses may provide useful data for such calculations.

At the present stage of the discussion, however, consideration of costs would seem to have very little relevance. If further investigation leads to the conclusion that the proposal would produce the effects anticipated by its proponents, then such costs as might be involved are of minor importance. On the other hand, if it leads to the conclusion that, far from attaining the desired objectives, it would be productive of serious problems, cost considerations are superfluous, clumsy, and confusing as guides for monetary policy and practice. Mention has already been made of the inherent political difficulties and the international complications that would be involved in establishing and maintaining such a system. It is worth remarking that the record of the silver bloc in Congress should be forewarning of the danger of creating a large number of producer groups who would have a pecuniary stake in the monetary standard.

The proponents of the plan acknowledge that the successful in-

[21] See especially comments on the plan by Redvers Opie, *American Economic Review Supplement*, 1940, p. 41.

troduction and operation of the plan would require many changes in the existing monetary and banking structure. It is not improbable that such changes constitute a considerably sounder and more feasible monetary reform than the adoption of the commodity currency proposal itself. Perhaps the most attractive feature of the entire plan is that it would provide an automatic stimulus to the production of basic commodities when their combined price fell below the coinage value. No corresponding stimulus to production is afforded by present monetary devices. One might look upon the proposal as suggesting a form of self-supporting public expenditure or depression insurance for these commodities. A further attractive feature is that these expenditures would be made automatically without the necessity for governmental appropriations or political maneuvering.

The inadequacy of traditional monetary policy based on the assumed responsiveness of private investment to changes in the supply of credit and interest rates is all too evident from our experience in the thirties. Nevertheless, it is far from clear that the present currency proposal provides the answer that is needed. It could happen that the basic commodity price level was stable, although the general level of prices was depressed. In that case no stimulus would be forthcoming. A more fundamental query arises as to the possible multiplier effects resulting from this plan as compared with various types of public expenditure. Could greater stimulus be expected from these expenditures than from a Muscle Shoals development, a social welfare program, or educational expenditures? It is reasonable to believe that far greater progress toward recovery might be achieved through a selective expenditure program than through the blind encouragement of production in the manner here proposed. And, finally, in view of our experience with gold, it is an alarming and disheartening thought that we should embark upon a plan that calls for the storage of not one but a large number of money commodities.

THE PRODUCTION FUNCTION FOR AMERICAN MANUFACTURING FOR 1914

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I

VARIOUS inductive studies in the theory of production have been made by one of the authors and his associates, seeking to discover the effect in manufacturing of changes in the quantities of labor and capital upon the quantity of product. These studies have been of two kinds: (*a*) time-studies, in which each observation is a year and (*b*) cross-section studies as of a particular year, in which an individual industry serves as an observation. In the latter group have been a series of nine cross-section studies for Australian manufacturing[1] and two studies for the United States for the census years of 1909,[2] and 1919.[3] The present study deals with the production function for 1914 in the United States and is based upon statistics for labor, capital, and the value of the manufactured product for the various industries, given for that year by the *Census of Manufactures*.[4]

The year 1914 was one of marked depression.[5] Unemployment increased rapidly during the winter, and there were minor riots by the unemployed in the early spring. World War I broke out in midsummer; bond prices collapsed, and the stock market was closed for nearly five months. Exports fell off very sharply, and business declined still further. The placing of war orders by Great Britain, which helped to bring revival and prosperity during 1915, had not begun to any real

[1] Grace T. Gunn and Paul H. Douglas, "Further Measurements of Marginal Productivity," *Quarterly Journal of Economics*, LV (1940), 399–428; and "The Production Function for Australian Manufacturing," *ibid.*, LVI (1941), 108–29.

[2] M. Bronfenbrenner and Paul H. Douglas, "Cross-Section Studies in the Cobb-Douglas Function," *Journal of Political Economy*, XLVII (1939), 761–85.

[3] Grace T. Gunn and Paul H. Douglas, "The Production Function for American Manufacturing in 1919," *American Economic Review*, XXXI (1941), 67–80.

[4] See *Abstract of Census of Manufactures for 1914* and *Census of Manufactures 1914*, Vol. II.

[5] For a brief description of the year see Thorp and Mitchell, *Business Annals* (New York, 1926), p. 142, and for a more detailed and week-by-week analysis the files of the *New York Times Annalist*.

extent in 1914, and the disturbed foreign situation therefore intensified rather than alleviated the depression. Under such conditions the value in dollars of product turned out with the aid of a given amount of capital available for use was less than it would have been in a year of revival or of prosperity.

For the year 1914 the census gives statistics for 340 manufacturing industries, and we therefore had that number of observations with which to work. We took data for labor (L), capital (C), and product (P), defining the respective variables as follows:

1. Labor = average number of workers employed during the year, including wage-earners, clerks, superintendents, and salaried workers but excluding proprietors and firm members. This was the definition used for the 1909 study. (In a second analysis the groups excluded above were included, thus making the definition of labor correspond to the one used for 1919.)

2. Capital = both fixed and working capital. This was the same definition as that used in the 1919 study, while in the 1909 study both this definition and also one which excluded working capital and land were used.

3. Product = value added by manufacturing measured in dollars. This was the gross-sales value of product *minus* (1) cost of materials, (2) fuel, light, and power, (3) contract work, (4) rent, and (5) taxes. This is the same unit as that used for 1919 but differs from the P of 1909 in that depreciation on plant and buildings was then subtracted, but not in the two studies for the later years (i.e., 1914 and 1919).

II

Using the formula $P = bL^kC^j$, or $\log P = \log b + k \log L + j \log C$, we found the following values for k and j:

$$k = 0.612\,; \quad j = 0.359\,; \quad \log b = 1.970\,;$$
$$\sigma_k = 0.027\,; \quad \sigma_j = 0.025\,; \quad b = 93.4\,.$$

These values of k and j are judged to be significant when compared with their respective standard errors, for the value of k is approximately twenty-eight times its standard error and that of j is sixteen times its standard error. The sum of k and j was 0.971, or very close to unity even though slightly below it. This tendency of the sum of the exponents to approximate unity is true also of virtually all our previous studies. It indicates an approximation to true constant returns for the manufacturing sector of the economy. It is a further corroboration

of the relatively high degree to which the production function in practice seems to approximate Euler's law.

Wicksteed long ago assumed that the production function was of the type to which Euler's law applies.[6] Despite the false irony of Edgeworth[7] in attacking this position and despite Pareto's bad logic, the principle of true constant returns does hold under perfect competition when firms and industries are at equilibrium, i.e., at the minimum point of their average total unit-cost curves.[8] Even when we give the skeptics their chance by writing the production function $P = bL^kC^j$ instead of $P = bL^kC^{1-k}$, the hard facts of life seem to bring the sum of the exponents very close to unity and to indicate the substantial accuracy of the simple analysis which Wicksteed developed nearly a half-century ago.

If labor is defined to include proprietors and firm members then, interestingly enough, k is lowered slightly to 0.609 and j is increased to 0.367. This is the opposite of what at first thought would be expected.

We should think of each observation as representing a point in three-dimensional space, the co-ordinates of the point being given by

$$X_1 = \log P\,; \quad X_2 = \log L\,; \quad X_3 = \log C\,; \quad a = \log b\,.$$

The function $P = bL^kC^j$ can be written

$$X_1 = a + kX_2 + jX_3\,,$$

[6] P. H. Wicksteed, *Co-ordination of the Laws of Distribution* (London, 1894), p. 4: "The Product being a function of the factors, we have

$$P = f(a, b, c, \ldots)\,,$$

and the form of the function is invariably such that if we have

$$x = f(\alpha, \beta, \gamma, \ldots)$$

we shall also have

$$\nu x = f(\nu\alpha, \nu\beta, \nu\gamma, \ldots)\,."$$

[7] F. Y. Edgeworth, *Papers Relating to Political Economy* (London, 1881), I, 31: "There is a magnificence in this generalization which recalls the youth of philosophy. Justice is a perfect cube, said the ancient sage; and rational conduct is a homogeneous function, adds a modern *savant*. A theory which points to conclusions so paradoxical ought surely to be enunciated with caution." Here Edgeworth in typical Oxford fashion dismisses a basic tool of analysis with a bon mot. And yet this is the same man who attempted to prove woman's inferiority by a quotation from Owen Meredith's *Lucille!* (See *Mathematical Psychics* ["London School of Economics Reprints," No. 10 (1932)], p. 78.)

[8] See J. Viner, "Cost Curves and Supply Curves," *Zeitschrift für Nationalökonomie*, III, 23–46. See also Joan Robinson, "Euler's Theorem and the Problem of Distribution," *Economic Journal*, XLIV (1934), 398–414: ". . . . constant returns in value do prevail when the firm is earning zero profit" (p. 411).

and, this being a linear equation in three variables, X_1, X_2, X_3, represent a plane. If the labor figures are all increased in the same proportion the X_2 values will all be increased in the same amount. This would correspond to a shifting of the origin, and the k and j values would remain unaltered. However, if the labor figures are increased in varying proportions, k and j will be changed.

If the labor figure is increased by a small percentage for the industries having low values for P and increased by a large percentage for the industries having high values for P, the result would be a lower value of k. On the other hand, if the proprietors and firm members represent a large proportion of the labor for industries having low values of P and a small proportion for those having high values of P, the change in definition of L would result in a higher value of k. If the variations in X_2 follow no definite pattern, we can make no prediction as to what will be the effect on k of a change in definition of L.

For each industry included in this study we computed R, the percentage of increase in L caused by the revised definition. Since the change in k was very slight, we might have thought that the R's would be practically uniform. This was by no means true, for they actually varied greatly. However, the correlation between R and P was very low, -0.05 in fact, and this is probably the explanation for the two values of k being so nearly equal.

III

In Chart I we show the degree to which the actual values of $\log P$ approach the theoretical values of the $\log P'$, as computed for each industry by the formula

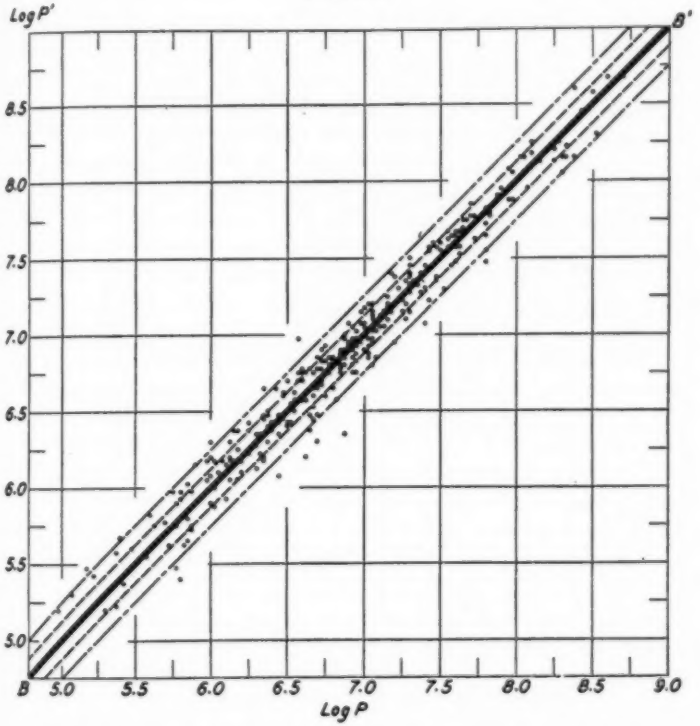
$$\log P' = 1.970 + 0.612 \log L + 0.359 \log C .$$

In this chart the horizontal axis represents the logs of P or of the actual values of product, while the vertical axis represents the logs of P', or of the computed values of product under the formula. Since the scale is the same on the two axes the line BB' (with a slope of unity) is the locus of all those points for which the theoretical values are identical with the actual values. The degree of departures of the actual from the theoretical is shown by either the horizontal or the vertical distance of a given point from the line BB'.

It will be noticed that the points tend to lie close to the line BB', indicating that the actual values conform closely to the theoretical. Two other pairs of lines are also marked out in the chart at the dis-

tances, respectively, of one and two standard errors of estimate on either side of BB'. Under a normal frequency distribution we would expect 68 per cent of the cases to lie within one standard error and

CHART I



THREE HUNDRED AND FORTY MANUFACTURING INDUSTRIES OF THE UNITED STATES, 1914

Theoretical and observed values of the Logarithm of Product; P' = theoretical product; P = observed product.

95 per cent within two standard errors. In fact, the distribution was as shown in Table 1 and Chart II.

It will thus be seen that the actual deviations were less than would be expected under a normal distribution, since 72.9, or virtually 73 per

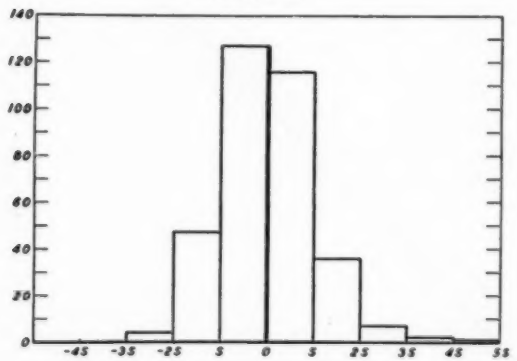
cent, were within one standard error of estimate, while 96 per cent were within two.

It is also interesting to note that of the fourteen industries whose actual value of product differed from the computed by more than two standard errors of estimate all but one were of a somewhat odd and

TABLE 1

Range from BB'	Number	Per Cent
$\pm 1S$.....	248	72.9
$\pm 2S$.....	326	95.9
Outside $\pm 2S$.....	14	4.1

CHART II



THREE HUNDRED AND FORTY MANUFACTURING INDUSTRIES OF THE UNITED STATES, 1914

Frequency distribution of the difference: $\log P - \log P'$

esoteric nature and might be expected to display some eccentricity of behavior.[9]

Another test of the theory is a comparison of the value of k with the percentage of product paid to labor in wages, or W/P. Theoretically, k would be equal to W/P when perfect competition prevails and

[9] These industries were airplane parts, canning and preserving oysters, charcoal, cordials and flavoring syrup, gold and silver reducing, jute goods, oleomargarine, patent medicines, pens (fountain), photo-materials, printing and publishing music, pulpwood, waste, and wood engraving.

the sum of exponents of the factors is equal to unity. We have demonstrated this before[10] and need not repeat the argument here.

The definition of L which excluded proprietors and firm members was adopted because we were able to get the amounts paid to labor as so defined, while we had no data on the amounts drawn by proprietors and firm members. The ratio W/P, or the share of product going to labor, was found for each industry; and, since each industry was used as an unweighted observation, in computing k we followed a similar procedure, taking the unweighted mean of these values of W/P. This average was found to be 0.586, or less than one standard error below the value of k.

The fact (1) that labor's share of the product was so close to what we would have expected under perfect competition *plus* the fact (2) that the sum of the exponents of the factors of production was so close to unity indicate that there was probably much more competition in 1914 in the economy as a whole than contemporary writers have sometimes assumed.

Those who are acquainted with our past studies on this subject will notice that the value of k is less for 1914 than for 1909 and 1919 and also less than for the time studies of American manufacturing and Massachusetts manufacturing. The values of k in those studies were between 0.74 and 0.76. The lower k for 1914 is not surprising, however, in view of the fact that 1914 was a depression year, during which product and labor decreased much more rapidly than the money values of available capital.

IV

Criticisms of the production function of the type advanced by the users of confluence analysis such as Dr. Mendershausen[11] are in our judgment essentially sterile. Recent discussion along this line seems to indicate that this group will reject any analysis which does not show every conceivable point on a production surface. But enormous quantities of labor are seldom wedded to minute quantities of capital, any more than giants and pygmies are often mated in real life. It may be remembered that General Tom Thumb married the charming dwarf,

[10] Gunn and Douglas, "The Production Function for Australian Manufacturing," *op. cit.*

[11] Horst Mendershausen, "On the Significance of Professor Douglas' Production Function," *Econometrica*, VI (1938), 143–53; see also the discussion between Dr. Mendershausen and ourselves over our cross-section study for 1919 in the *American Economic Review*, XXXI (1941), 563–69.

Lavinia Warren, and not Barnum's other protégée, the giantess, Anna Swan. So is it in general. Even though there is a tendency for increased quantities of both labor and capital to be associated with increased product, it is surely the worst form of scholasticism to reason that it is the increased product which gives rise to the increased quantities of capital and labor. Because the statures of husbands and wives tend to be positively associated with each other and with that of their offspring, would the high priests of confluence analysis maintain that it was the stature of the children which helped to determine that of their parents? Sir William Petty knew better than this two hundred and fifty years before Ragnar Frisch, when he remarked, "Labor is the father of wealth as land is the mother"; and, since it is capital rather than land which is the fellow-parent in the case of manufacturing, surely it is appropriate for us to determine the effect of changes in the quantities of labor and capital upon a dependent variable, namely, product.[12]

[12] Cf. John H. Smith, *Statistical Deflation in the Analysis of Economic Series* (privately printed, Chicago, 1941; Ph.D. thesis, School of Business, University of Chicago), pp. 78–79: "When the purpose of a study is to derive an estimating equation it is irrelevant whether or not the available series have systematic parts which are perfectly correlated. The estimating equation should be derived in a manner consistent with its intended use: the methods of estimating the parameters should be the same as would be appropriate if there were no errors in the independent variables. An observed value of the dependent variable should be considered as a random sample from an array of values associated with a given set of observations on the independent variables. The research worker should specify that the mean of an array of values of the dependent variable is a single-valued linear function of the independent variables. When such arrays are normal, maximum likelihood estimates of the required coefficients are the elementary regression coefficients."

BOOK REVIEWS

Big Business, Efficiency and Fascism: An Appraisal of the Efficiency of Large Corporations and of Their Threat to Democracy. By KEMPER SIMPSON. New York: Harper & Bros., 1941. Pp. x+203. $2.50.

After a careful examination of this book, I reluctantly reach three main conclusions. It is not a scholarly treatise, conveying important new information or presenting a new and dependably thoughtful analysis, helpful to students or professional specialists. It is not an intelligent or successful attempt to expound to laymen in understandable terms a difficult question of economic policy, with a full and fair presentation of *all* the important available evidence and a proper notice of the important gaps in evidence. It is artful propaganda and utilizes the paraphernalia of scholarship in a manner likely to overawe and deceive the uncritical reader. A reviewer who announces such conclusions owes it to his readers, and to the author reviewed, to state his reasons; and I now state them as fully as the space reasonably available for a review permits.

The book presents no important new information. The bulk of that part of the book subtitled "Evidence" is a summarization and restatement of statistical materials, and interpretations thereof, already published in *Relative Efficiency of Large, Medium-sized, and Small Business*, a T.N.E.C. monograph presumably accessible to scholars.[1] Chapter xi, comparing average wages paid by companies grouped according to size, summarizes data elsewhere available; but this chapter might be called helpful analysis in that it keys those data to the cost analyses of the T.N.E.C. monograph. In all of that part of the book subtitled "Argument," I find no significant new information and no substantial analysis which deserves to be called new and dependably thoughtful. I hasten to remark that the author makes no claim to reporting any new information in the book, but frankly reports that he uses data available in sources carefully noted, and that he makes no claim to advancing any new contribution to scholarly analysis.

[1] No. 13 (Washington: Government Printing Office, 1941). Letter of transmittal bears date of August 14, 1940. Author of book under review states in Preface that Monograph 13 reported an inquiry conducted by him for the F.T.C. and the T.N.E.C.

The author might have been not only excused but commended if he had done a thorough and careful job of informing the lay reader concerning *all* the important known or knowable facts relating to industrial efficiency, about the role of efficiency in affecting the evolution and present condition of the competitive system, about the means of reviving competition, about the relation between efficiency and unemployment, and about the relation of both to fascism. Economists are well aware of the great need for, and great difficulty in the way of, making the results of their research available to laymen; and a reviewer in an economic journal would heartily approve a book which intelligently and successfully performed that task with respect to any significant economic problem. Can this book win applause on that count? Can the author really believe he has given the lay reader a full and fair presentation of available evidence and warned him of gaps in evidence?

Despite the danger that quotation without context may give false impressions, I think the following quotations (italics mine) express thoughts which their contexts in no way alter:

> There is one primary condition [for democracy to revive and succeed]: every man who wants to work must be allowed to work and earn a *decent living* [p. 6].
>
> If the American economy ever fails the American democracy it will be because of the selfishness of those who have sought to concentrate economic power in their own hands [p. 7].
>
> What the *giant* corporations can be criticized for, however, is their selfishness in restricting and destroying the competition of their *medium-sized* and small competitors [p. 8].
>
> Finally, the greatest danger for democracy lies in the possibility that big business, *having sown the seeds of fascism*, may later feel constrained to nourish them with its resources [p. 10].
>
> Industrialists in striving for what they consider to be "efficiency" *inevitably* resort to great mergers and consolidations [p. 17].
>
> Big business asks for unlimited size and the *abrogation of competition* in the United States in order to serve the American consumer by increased efficiency [p. 31].
>
> Convinced of the "destructiveness of price wars," big businesses *seldom actually compete* with one another [p. 32].
>
> All such practices [price maintenance], it can be demonstrated, breed inefficiency *throughout industry* [p. 40].

I ask any economist who knows and respects the truth to judge whether a volume which abounds in such gems as these is calculated to give the lay reader a fair picture of an economic problem.

The foregoing excerpts are quoted to indicate that the part of the book called "Argument" may be somewhat lacking in the judicial tone and critical care which one might hope to find in the thoughtful work of a scholar addressing himself to laymen. One may note further that the "Argument" is notably characterized by oversimplification. Perhaps an economist addressing laymen will contend that some oversimplification is necessary, or desirable; but does this justify stating the case in terms which imply that the huge burden of unemployment is largely due to destruction or prevention of competition, practiced by the allegedly less efficient top-size firms which yet find themselves confronted by successfully efficient medium-sized (so-called by the author, but large in any reasonable layman's view) and small firms? Does the author discuss carefully any other possible causes of unemployment? Does he explain how the "selfish" giant companies, in their vile purpose to destroy competition, permitted these robust "medium-sized" competitors to rise to full-efficiency stature? And, if he blames not only the giants but also the group of next largest firms for the limitation of competition, does he indicate to the reader how competition can be revived? As far as I discover, his chief suggestions for reviving competition are an implication—that "we restrict the growth of big businesses"—and an assertion—that, when we dissolve a giant company, the parts "be kept separate"—on page 64. Does the author really believe these actions will *revive* competition on a scale sufficient to eliminate the menace of our unemployment problem? Does he anywhere discuss the efficacy of recent governmental policies—such policies, to mention only a few, as the fostering of monopolies in agriculture and in labor, and various public actions directly restricting competition in trade or industry—and their bearing upon efficiency, competition, and employment?

I turn now to an examination of the part called "Evidence." As the bulk of this rests directly upon Monograph 13, which will perhaps receive elsewhere the severely searching review which it deserves, I shall mention only a few outstanding points to show that the book now under review does not adequately inform and protect the reader. The bulk of the "Evidence" is directed to the comparison of efficiency in firms of different size. In the welter of material purporting to test this question, the reader may not notice that many important areas of industry (other than the admittedly distinct case of public utilities) are not covered at all; no tests appear for: meat-packing, canning (other than canned milk), beverages (other than milk), tobacco, tex-

tiles (other than rayon), clothing, leather and shoes, rubber tires, lumber, paper, printing and publishing, glass, brick, nonferrous metals (mining or refining), machines (other than farm machinery and automobiles), retail trade (other than milk distribution), and coal mining.[2] He may not notice also that, despite allusion to use of data in some cases for more than one year, the tests contain no systematic appraisal of efficiency over a succession of good and bad years, even in the highly cyclical industries covered. And he may not notice (though I am bound to say the author warns him but without clearly showing the full implications) that the companies tested are all large in any ordinary man's sense of the word.

The F.T.C. cost studies help little or none at all in testing efficiency at that crucial level where competition can begin and "equality of opportunity" can be hoped for—at the small-business level. These studies merely take the extreme high end of the scale of industrial size—a scale ranging from the very numerous small enterprises with a few thousand dollars of capital to the giants—and break that limited range into arbitrary groups called large, medium-sized, and small. But those called "small" are still large. I dwell upon this point for two reasons: (1) When tests are confined to the small number of companies at and near the top end of the scale of size, the play of chance has a peculiar opportunity to produce just such results as the book reports. Indeed, one could examine the italicized conclusions in chapter v case by case and charge that the results are no less favorable for the giants than might have been expected from chance alone—and this particularly in view of the inadequate testing of successions of years noted above. (2) The important question concerning efficiency, in the problem of restoring healthy competition, is not touched in these tests. That question involves a comparison of efficiency between the truly small enterprises, which are struggling to survive and grow, and all of those covered by the tests.

On this point the author quoted my *Corporate Earning Power;* and, although I do not contend it was misquoted, I emphatically protest that the truly pertinent implications were not brought out. My study did show that, for each of several years and in each of several branches of industry, earning power on stockholders' equity was closely related to size. The author rightly says that, when I excluded companies re-

[2] The author examines some of these other industries in his wage analyses, of chap. xi, but not in his cost analyses.

porting deficits, the rate of return generally declined with size for the others; but he did not make clear that the rate declined very slowly in all the upper reaches of the size scale—the very section of the scale which he classifies into large and medium-sized and possibly also small—so slowly indeed that one may fairly question the statistical significance of such decline. He correctly stated that, when I included all companies, deficit-reporting and profit-earning together, the rate rose with size; but he did not point out the vast importance of this from the point of view of competition and of economic stability. The essential point is that large companies on the average do not apparently suffer the heavy (in percentage of capital) losses suffered by small companies. This suggests that large companies have a far greater chance of survival and that their presence contributes to economic stability—financial and otherwise. Perhaps an adequate test of efficiency would take some account of this capacity of large enterprise to withstand shocks to earning power and of small enterprise to dissipate capital. Certainly my evidence strongly suggests that the small companies as a group must, in a period of depression, rapidly waste capital and by their own insecure and unstable situation contribute to instability in finance and perhaps also in employment. The central problem of restoring competition hinges on this question of the efficiency and power of survival of the truly small enterprise. The policy question is: How can we improve the health of these very numerous enterprises which are starting up the competitive ladder? Nothing of *that* in *this* book! *That* would have contributed nothing to the reader-impression that giant business is the devil which kills competition and threatens to bring fascism!

The conclusions of the cost studies as made, with all their defects, give in fact a very slender support to the book's savage attack on giant enterprise. These conclusions, largely summarized in the italicized items of chapter v, clearly reveal that in some cases the very large companies stand up more favorably under the alleged tests of efficiency than those other large companies in their respective industries which are called medium-sized and small. Some of the tests, on the other hand, show the very large concerns at a disadvantage compared with the others. Waiving the doubts as to whether these "tests" prove anything, what is the most which they can be said to prove? Is it not that mere maximum size is not invariably accompanied by maximum efficiency? If increase of size—above what is called medium—

is expected to result in improved efficiency, does not the book merely show that sometimes or in some cases that expectation is not realized, whereas in numerous others it is realized? And is not this a very slender basis for writing in such a way as at least to suggest the inference that the giant corporation has no excuse for existence (in the Preface, the author refers to the "vaunted efficiency of the giant corporation" as "its only possible justification"), and the further inferences that these giants stand in the way of a revival of competition, of a cure of unemployment, and of a protection of democracy from fascism?

In much of what I have written the reader will see reasons for my calling the book propaganda. To justify calling it artful I should perhaps need (and would be able) to quote further excerpts and to point in detail to instances wherein the presentation of evidence shows marks of an allocation of emphasis, if not selection of material, having the effect—whether intended or not each reader must judge for himself—of contributing support to a preconceived thesis. Moreover, the tone of the book, particularly in the part called "Argument," is that which appeals to emotion rather than to sober deliberation. The frequent imputation of "selfishness" to leaders of big business is merely one of numerous evidences of this tone. And why object to selfishness, pray? Is not selfishness the assumed guiding motive of competition, and does an author who calls his book "a plea for the revival of competition" (Preface) have in mind a new form of competition whereby the competitor ceases to pursue an enlightened self-interest?

In concluding I must note that I do not protest against the making of a plea for competition—or any other policy plea which interests him—by an economist. I particularly do not object to propaganda in favor of a revival of competition—I suspect I am as heartily in favor of a true revival in this direction as the author. But I do emphatically protest against calling the paraphernalia of scholarship—without the frank and critical evaluation of evidence and the painstaking restraint in inference which mark true scholarship—into the service of propaganda. If the typical American layman is to be taught economics by such books as this, and if he is so gullible as to accept such an "analysis" as convincing, I fear that fascism or something as dreadful may be even closer at hand than we have dared suppose.

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Old Age in Sweden: A Program of Social Security. By HELEN FISHER HOHMAN. Washington: Federal Security Agency, Social Security Board, 1940. Pp. xiii+305. $0.35.

During the debates which preceded the enactment of the Social Security Act Amendments of 1939 the Swedish system of old age security was frequently cited as a model which the United States ought to imitate. More specifically, the advocates of a reduction in the old age insurance taxes used as one of their major arguments for what they called "pay-as-you-go" financing the fact that Sweden in 1935 abandoned the full reserve basis of financing the contributory part of its old age security program. Practically everything said and published on this subject in this country at that time was little better than special pleading, presenting, or at least emphasizing only such parts of the story as could be used to support the authors' views as to the policies which should be pursued in the United States.

The study to which this review relates is on a distinctly higher plane. It was completed while the 1939 amendments were pending, and in the concluding chapter the author draws implications from the Swedish experience for this country, with particular reference to the issues uppermost at that time. The strength of the study, however, lies not in this concluding chapter but in the preceding eleven chapters, in which the author presents the complete story of the Swedish program for invalidity and old age security.

The high points in the Swedish experience can be summarized as follows: Sweden enacted an old age and invalidity pension act in 1913 which, with some changes in details, remained in effect until 1937, when the new law, passed by the Riksdag in 1935, came into operation. The 1913 act established two distinct programs, both administered by the same agency of the national government and both applicable to the entire population with but few exceptions. One of these was a contributory old age insurance system financed from contributions assessed on the incomes of insured members, without any contributions by either the employers or the government. In 1936, the last year this act was in effect, 93 per cent of all people in Sweden between sixteen and sixty-seven years of age were assessed, and 82 per cent actually paid contributions to the old age insurance fund. The contributions, however, amounted only to an average of Kr. 7.6 per contributor for the year—about $1.90 in American money. This is considerably less than one-half of 1 per cent of the average income of all gainfully oc-

cupied persons in Sweden and a still smaller percentage of the average wages. As the benefits were strictly limited by the amounts the fund could pay, computed on a reserve basis, such small contributions inevitably resulted in very meager pensions.

In addition, the government in the second program provided for supplemental pensions to permanent invalids, financed from general taxes, conditioned upon a strict means test—something like old age assistance in the United States. Only one-ninth of the total costs were met by the contributory part of the system, and 60 per cent of pensioners received supplemental payments in addition to their contributory pensions. The supplemental payments were much more liberal than the pensions, but for the 60 per cent of the pensioners who benefited from both programs these payments averaged less than Kr. 185 per year, while the 40 per cent who received contributory pensions alone were paid on the average Kr. 24—less than $4.00 and about 50 cents per month, respectively, for the two groups. Old people, of course, could not live on such small amounts, and more than one-third the total number of pensioners simultaneously had to get poor relief from the local governments.

The 1935 law, as amended in 1937, made these major changes. First, contributions were increased, being doubled for the people in the lowest-income group. At that, they remain at a very low rate, ranging from Kr. 6 to Kr. 20 ($1.50 to $5.00 per year) and amounting for both husband and wife to 1 to 1.5 per cent of the earnings of the married wage-earners whose wives are not employed and to even smaller percentages in other situations. Second, both the prime (contributory) and the supplemental pensions were increased. The prime pensions now consist of a fixed amount of Kr. 70 per year (not quite $1.50 per month) and a variable portion depending upon the prior contributions of the pensioner but never exceeding Kr. 96 ($2.00 per month). Third, the supplemental pensions now are no longer conditioned upon proof of invalidity where the claimant is over sixty-seven years of age but are still subject to both a means and a character test, the latter being made more stringent. Their amount now varies with the area in which the pensioner resides, taking account of differences in cost of living. The attempt to maintain the contributory part of the system on a fully financed basis was abandoned, a partial reserve being stipulated in lieu of a full reserve. The excess over Kr. 20,000,000 per year in the collections above disbursements for prime pensions is now used for payment of a part of the costs of supplemental pensions. The local

governments also are required to bear a larger part of these costs. The national government's appropriations, likewise, have been increased, and it is recognized that in course of time they will have to be much greater, but no provisions have been made for meeting the anticipated future deficits.

When the data for this book were gathered, the new law had just come into effect. The avowed aim of the Social Democratic party, which put through this legislation, "is to remove the aged and the permanently invalided from the poor law." That it was not able to do so is suggested by the author's conclusions that "there is a tendency for standards of relief . . . . to provide higher amounts than pensions," although "in a great many communes the pension yields more than relief."

Interest in the United States in the Swedish program for old age security has been confined to the changes in the pension legislation recited above. As is brought out very clearly in this study, however, pensions constitute only one part of the Swedish program of old age and invalidity protection. Since 1927 the percentage of the total expenditures for social services devoted to pensions has declined. For old people and invalids Sweden provides not only pensions but medical treatment and vocational training to prevent invalidity, old people's homes, subsidized housing, blind compensation, sickness insurance, and extensive public medical care. As in other Scandinavian countries, the most significant development of the last decade has not been the change in the basis of the future financing of the contributory part of old age pensions but the remarkable growth of services in kind. As the author notes also, it is the children rather than the old people who are now receiving the greatest amount of public attention.

What lessons for the United States are to be drawn from the Swedish experience is debatable. To the reviewer it seems probable that the more Americans examine the Swedish pension system, the less they will be inclined to copy all its features. But there is in the Swedish method of dealing with the problem of providing adequate income in old age and invalidity much that we might profitably adapt to the United States. It is fortunate that we now have in English, in Mrs. Hohman's fine study, a comprehensive and accurate source of information on the Swedish experience.

EDWIN E. WITTE

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Il Risparmio e l'interesse nella grande industria bancaria. By ANTONIO GRAZIADEI. ("Biblioteca di scienze sociali" [new ser.], Vol. IV.) Milan: Fratelli Bocca, 1939. Pp. xi+314. L. 25.

In the main this study is an investigation into the factors determining the rate of interest on that part of money capital which is being lent by the banks, in terms of partial equilibrium analysis of the demand for and the supply of money capital. The author adopts Keynes's view that the rate of interest is determined, on the demand side, by demand for money capital in general, not for loanable funds alone. Graziadei's analysis is essentially static, and he expressly rejects the idea that profit and interest appear only in a dynamic society.

The curve of demand for money capital, according to our author, is a monotonically decreasing function characterized by a greater or lesser, but never infinitely small, degree of elasticity at practically all points. As a statistical refutation of the view that the demand for capital is inelastic with respect to the interest rate over a not-too-small range of the demand curve, he cites Bresciani-Turroni's computations regarding the fluctuations of the discount rate of the Bank of England, on the one hand, and the amount of bills turned in to the bank, on the other, which support the orthodox assumption that the discount policy of central banks *is* an effective means of influencing the demand for capital.

The main contribution of the book lies in the chapters discussing the supply schedule of money capital. The author first deals with the supply curve of the capital lent out by private individuals. He points out that this curve, determined as it is by the amount of capital saved, is not a cost curve in any sense of the word; and he lays great emphasis upon the contrast existing in this respect between this curve and the supply schedule of capital lent out by the banks. Here, Graziadei asserts, the supply curve is a true cost curve. To analyze its components, he first discusses the various types of costs which a commercial bank incurs in carrying on its business. Under the heading of direct costs he includes administration expenditures and costs of foundation. Interest paid out is another component of costs in banking, and insurable and noninsurable risk is the third and last part. The author believes that total banking cost (the sum of the above components) per unit of what is here the "output"—i.e., the sums lent by the banks—gives the supply curve for the price of the capital lent by the banks in exactly the same sense as the curve of unit costs of production in industry gives the supply curve for the commodities sold by the corporations. He further

assumes that these unit banking costs decrease with expanding business over a rather wide range, increasing costs being met with only at the start (i.e., in the transition from an exceedingly small scale of operations to the next larger one) and at the right side of an optimum point which is reached at a fairly large volume of transactions.

Starting from these assumptions, Graziadei constructs a demand-supply schedule of the familiar Marshallian type. Under competitive conditions the point of intersection between the supply curve described and the monotonically decreasing demand curve indicates the actual rate of interest on capital lent out by the banks and, at the same time, determines the amount of capital lent. The effects of a reduction in banking costs on the amount of bank loans and on the equilibrium interest rate are shown with the aid of a simple extension of the original diagram. The author maintains that virtually all conceivable variations in demand for, and supply of, money capital flowing through banks can be adequately described by curve shifts within his simple two-curves schedule. He discusses a few of the alleged recent long-term variations in the level of interest, and concludes with a brief critical review of some of the more important theories regarding the level of interest and its fluctuations.

The main original idea of the book lies in the suggestion that the factors working on the supply of bank loans—as distinct from money capital lent by private individuals and nonbanking corporations—should be subjected to special analysis. Although the author's view that almost all the forthcoming capital supply flows through the commercial banks (p. 79) is probably no longer correct in our days, the role of the banks on the capital markets is still very important, and analysis of the special factors influencing the formation of interest rates within the sphere of banking is still desirable. But the solution offered by the author may well raise some doubts. His procedure rests on the assumption that the curve which indicates variations of unit banking costs with changing volume of banking business may be identified with the curve which determines the supply price of the capital the institutions lend out. Is this, however, a safe assumption? It may be true that the most important supply factor—the volume of the capital deposited with the banks—is adequately taken care of in Graziadei's schedule, inasmuch as interest paid on deposits is one of the components of his cost curve. But banks do not pay any interest at all on certain categories of deposits, whose volume is certainly not a matter of indifference in the lending policy of the banks. And are there not some other factors op-

erating on the supply side of the capital market—including that section of it where banks intervene—which can hardly be compressed, as it were, into a simple Marshallian curve of unit banking costs?

ERICH SCHIFF

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Land Utilization in Australia. By S. M. WADHAM and G. L. WOOD. Melbourne: Melbourne University Press in association with Oxford University Press, 1939. Pp. xix+360. 21*s*.

The happy and fruitful collaboration of a technical agriculturist and an economist, both seasoned by long years of experience in grappling with the practical problems of the Australian economy, has resulted in a book which takes its proper place beside the studies of Isaiah Bowman and the volumes of the "Canadian Frontiers of Settlement" series. In this book, history, description, analysis, and interpretation are skilfully blended in a broad, masterly treatment of the authors' subject; excellent maps, diagrams, and plates illustrate their exposition and argument; a rather scanty index, which could scarcely be expected to sustain the almost encyclopedic range of the work, was the sole weakness discovered by this reviewer.

The opening chapters of the book provide the historical background and geographic setting. There is a careful historical survey of settlement, drawing attention to the factors which have influenced successive phases of land utilization in the different parts of Australia. The rise and development of the wool industry, of wheat growing, of dairying, of other rural industries, and of irrigation are traced. This is followed by a study of the natural factors controlling the use of land, in which climatic considerations (temperature, rainfall, humidity), soil types, topography, and clearing costs are considered and the various belts of land utilization into which the continent may be roughly divided are established.

Against this background a series of chapters (iv–xiv, inclusive) describes the important primary industries of the Commonwealth. This part of the book naturally begins with an analysis of the place of wool in the Australian economy—dealing at length with basic problems of land utilization in the sheep industry; alternative uses for land; the relation between wool markets and land utilization; changes in the world-demand for wool; world-prices and Australian costs. A similar, though less exhaustive, treatment is given for each of the other rural

industries—wheat, dairying, meat, sugar, fruit, etc.; irrigation and forestry are examined in separate chapters. In each case there is a shrewd appraisal of the relative significance of the geographic, economic, technical, political, and social forces at work.

The concluding chapters (xv and xvi) of the study are given over to a discussion of the probable limits to land utilization and settlement in Australia imposed by domestic economic and social policies and by world trends in economic nationalism, population, consumption, and investment. The authors began their work with a full recognition that the "*idée fixe* of an expected standard of living is one of the major factors limiting land settlement" (p. viii), yet it is significant that

> the main conclusion which emerges, ... is that, whatever the standard of living accepted by the inhabitants, four-fifths of the country could not be settled much more densely because of rainfall deficiency or other factors. When the proportion of barren upland is deducted from the remaining twenty per cent which is *climatically* suitable for more intensive development, the disparity between people and land takes on an altogether different complexion. It may be, indeed, that the amount of land which is adaptable to the conditions of closer settlement is not even now excessive when the probable needs of the present population at its natural rate of growth are considered [p. 323].

It is a fascinating story of a new country that the authors have to tell. The story is of peculiar interest to Canadians, for all primary producing countries dependent on prices determined in export markets have many problems in common. The "trinity" of controls formed by "seasons, soils, and sales" which is emphasized throughout the book operates no less sternly in the wheat economy of the prairie provinces, where the statement that "profitable farming was found to depend, to a unique degree, upon reliability of rainfall" (p. 3) has a grimly familiar ring and where the "drought complex" (p. 44) is as definitely rooted. Canada also has suffered, as our transport problems attest, from that disease of all great continents aptly described by the authors as "geographical elephantiasis," though in the golden age of development we too discovered that "high export prices, plus a high rate of borrowing, tend to set up conditions promoting a high standard of living" (p. 5). There is a similar record of governmental intervention, including the lavish use of public funds—and particularly of public credit—to provide much of the capital equipment necessary for rapid settlement, followed, in periods of depression, by agricultural aid and the machinery of agricultural debt adjustment. At the present time in rural Australia,

as in western Canada, the emphasis has shifted from problems of exploitation to problems of conservation; and correction of the more glaring mistakes in settlement and land-utilization policies is demanding careful planning and constructive action on a fairly large scale by federal and provincial or state governments. For Australia, as for the prairie provinces, "irrigation offers no solution to the problem of the vast open spaces. One essential feature is lacking—the water" (p. 324)

A further interesting fact emerges clearly from this book. The Australian wheat economy is much less vulnerable than the great spring-wheat region of Canada and the United States. Alternatives to wheat exist both on the fertile red soils of the Wimmera and on the parched sandy soils of the Mallee. Intensive specialization in wheat is unnecessary, and throughout the Australian wheat belt "it is generally agreed that wheat-growing without sheep is inadvisable" (p. 136). Another credit entry is the genial nature of the Australian climate, which accounts for the absence of barns from the rural landscape, reduces costs, and makes possible a higher standard of comfort and of living for farm families.

The authors freely admit that in writing this book they had neither the time nor the finances necessary to provide any satisfactory account of such related social phenomena as land tenure, the framework of local government, the sociological organization of rural communities, social services, and standards of living in rural Australia. We can only hope that they may find it possible to redeem their promise to give us a supplementary volume of this nature to answer the many questions stimulated by their excellent treatise on land utilization.

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Der "New Deal" und seine Einwirkung auf die Finanz- und Steuerpolitik der Vereinigten Staaten von Amerika. By OTHARD SCHULZE. ("Finanzwissenschaftliche und volkswirtschaftliche Studien," ed. K. BRÄUER, Vol. CCCXI.) Jena: Gustav Fischer, 1940. Pp. xvi+148. Rm. 6.

The author collected the material for his study of the financial policies of the New Deal during a visit in this country of several years' duration and wrote the text during a furlough from service on the military front. This fact may explain why the book offers a great amount of factual information on expenditures, revenue, administra-

tion, and economic policies of the federal government from 1933 to 1940 but only a very superficial analysis and interpretation of this material. Almost no attempt has been made to investigate the results of the New Deal fiscal policies.

There are a few errors in the factual presentation (such as confusion with respect to the different bases of the various social security pay-roll taxes and failure to note that the tax of 1935, with the provision for graduation, was repealed before it became effective). In general, however, the factual data seem to be accurate.

The author rightly emphasizes the close interrelationship between fiscal and economic policies. He tries to explain most of the fiscal policies as growing out of President Roosevelt's belief in the underconsumption theory—certainly a grossly oversimplified interpretation. He is more correct in the description of the struggle between "big business" and the "New Deal" on the fiscal front.

Schulze refers to the defense effort as a large public works program pursued solely for domestic purposes but at the expense of good relations with Germany. The author sees in the fiscal policy of these years the seeds of an "authoritarian" regime (pp. 109 and 119), and the editor, Professor Bräuer, emphasizes this conclusion in the Preface, describing American policy as an attempt to imitate authoritarian methods, but predicts the failure of this attempt unless the political institutions and the mental attitude of totalitarian regimes are also adopted.

GERHARD COLM

Washington, D.C.

America's Economic Growth. By FRED ALBERT SHANNON. New York: Macmillan Co., 1940. Pp. viii+867. $3.75.

This book is a revision of the author's *Economic History of the People of the United States* published seven years ago. Although somewhat reduced in size, it is still a sturdy volume of more than eight hundred pages. The revision has been largely a matter of careful pruning, although some sections have been entirely re-written. Several new chapters bring the narrative to 1940. The emphasis and conclusions remain substantially the same as in the earlier edition.

The older edition is one of the best of the economic histories of the United States. As the present volume is an improvement over the earlier work, little need be said of the general quality of the book. No

writer of American economic history texts shows a more encyclopedic knowledge of the subject and at the same time a greater ability to secure balance and clarity in presenting the material. The reviewer would prefer a greater emphasis on economic analysis even at the expense of curtailing the historical narrative but is quick to confess that the treatment is above the average even in this respect.

Professor Shannon retains his penchant for occasional, striking evaluations. These judgments are often so sharply and frugally expressed as to yield epigrammatic gems. Of course, the reader will not always agree with the author's judgments—in fact, the reviewer's blood pressure rose slightly on one or two occasions. But, if the student is not required to agree with the author, the effect should be stimulating and thought-provoking.

The reviewer found very few points at which he would seriously disagree on questions of fact or their interpretation. It does seem worth while, however, to single out the author's treatment of foreign trade during the 1820's for a demurrer—and this is less a criticism of Professor Shannon, who has merely followed the beaten track as the writer of a general text must frequently do, than it is of practically all those who have attempted to explain the so-called trade decline of that period. The author presents the generally accepted view that the exports of the United States declined after the brisk trade following the War of 1812 and holds that this decline was caused by such conditions as the development of internal transportation, the increased home demand for foodstuffs, and the restrictive force of the British Corn Laws.

But what is interpreted as a decline in foreign trade should be understood as a remarkable reduction of the general level of prices. The year 1819 marks one of the most precipitous price declines in our whole history. So, while it is true that the average annual value of domestic exports was higher in 1816–20 than in 1821–30, the physical volume of domestic exports was, as measured by any reasonable index, actually much greater in the latter period. Thus comparing 1821–30 with 1816–20, the average annual physical volume of exports of cotton increased 196 per cent, tobacco 12 per cent, rice 33 per cent, pork 17 per cent, bacon and hams 178 per cent, beef 81 per cent, and pot and pearl ashes 18 per cent. Against these gains must be set a few losses, such as flour (16 per cent), boards, planks, and scantling (13 per cent), and dried and smoked fish (4 per cent). But the whole situation is best illustrated by the dominant commodity, cotton, the domestic exports of which

rose from 92.5 million pounds in 1818 to 298.5 million pounds in 1830; but, as prices were drastically lower in 1830, the exports for that year actually had a smaller money value than those of 1818.

In the light of this analysis the widely accepted statement that the development of internal trade caused a decline of exports is exposed as a curious rationalization. And this is indeed fortunate for the logically minded, for the very textbooks which state that development of the internal transportation was a hindrance to foreign trade in the twenties typically find it a remarkable boon in the 1850's.

Nor are the accepted reasons for the decline which actually took place in wheat shipments any more convincing. Is it not remarkable that the alleged great increase in the domestic demand for flour should have been accompanied by phenomenally low domestic prices for this commodity? Moreover, recent studies place grave doubt on the importance of the British Corn Laws as a restrictive influence on American flour shipments at this time. Here again a study of prices and costs suggests a much more plausible solution, namely, that the United States was a marginal supply area for the British market. Only when English prices were unusually high could we, even as late as the Civil War, compete successfully in that market with supplies from Germany, France, and Russia.

GEORGE R. TAYLOR

Amherst College

The Economic History of Steelmaking, 1867–1939: A Study in Competition. By D. L. BURN. Cambridge: At the University Press; New York: Macmillan Co., 1940. Pp. x+548. $6.50.

The beginning of the period of intensified international competition in steel was signalized by two events of 1879—the enactment of the German protective tariff and the announcement before the Iron and Steel Institute of the Thomas basic process for eliminating phosphorus from iron ore. The basic process was of course much more important than the tariff act; tariff-making or counteraction was a game all could play at, whereas the competitive significance of the new technique lay deep in the iron deposits of Germany and Belgium. It was at about the same time, too, that the iron resources of the Lake Superior region were coming into prominence as the basis of the phenomenal expansion of the American steel industry.

The central theme of the volume is the interaction of various factors affecting the international competitive position of the steel industry of Great Britain. These factors include basic resources; techniques and the attitudes of producers toward innovations; tariffs, subsidies, and other public policies; markets and the tactics used in controlling them; and comparative labor costs. The author is not unaware of the doctrines of international trade derived from theoretical assumptions of free competition, but his approach is that of economic historians such as J. H. Clapham, to whom, in particular, he acknowledges a heavy debt.

Much attention is given to labor costs, and the author avoids a common fallacy of making comparisons merely in terms of wage rates. He attempts to get at the effects of wages on competitive power in terms of labor cost per ton, though he recognizes the difficulties in the way of such comparisons over so long a period. There is a discussion, notably in Appendix II, of prime costs and especially of wages, as affected by variations in output. The author describes the theoretical basis of the tendency of average prime costs to rise with falling output and gives some statistical evidence from German employment and production records for 1928–30. He seems, however, to have been unaware of the much more exact and convincing statistical analysis made for the United States Bureau of Labor Statistics by B. H. Topkis and H. O. Rogers and published in the *Monthly Labor Review* of May, 1935 (p. 1155). The study shows that with varying percentages of total capacity in operation, there are remarkable variations in the number of man-hours of both manufacturing and administrative labor required to produce a ton of steel.

Throughout the volume there is much discussion of the industry's recurring "malaise," both in Great Britain and in other countries. The final chapter, entitled "A New Start," describes the efforts made by the British during the thirties to prescribe for the malaise of their producers. The prescription was little more than a protective tariff, aided by depreciation of the pound, and accompanied, to be sure, by various official efforts to bring about recapitalization, rationalization, and increased efficiency. The reports of the Sankey and May committees are discussed in some detail. The author states that "the principle of State control is conceded" but asserts the need of far more rigorous control, less "cluttered up with compromises." This pre-war view seems now extremely mild, and in the light of war conditions the attempts to date

to cure the illness of the industry may seem trivial. At the same time, those who have the responsibility of formulating post-war industrial policy would do well to ponder, if not the remedies attempted, at least the author's diagnosis of the recurring malady of steel.

WITT BOWDEN

Washington, D.C.

Business Cycles and Their Causes. By WESLEY CLAIR MITCHELL. (A new edition of Mitchell's *Business Cycles*, Part III.) Berkeley: University of California Press, 1941. Pp. xii+226. $3.00.

From time to time Dr. Mitchell has been urged to prepare a revised edition of his memorable *Business Cycles* (1913), and at last he has consented to reprint Part III thereof, which now appears as *Business Cycles and Their Causes*. The earlier parts have been omitted with the disapproval of some of his colleagues. Dr. Mitchell feels that though there is good ground for reprinting a contribution to economic theory, there is little for reprinting "business annals and statistics that end in 1911 or a review of business-cycle theories as they stood in 1912." These can better be supplied by the continuing studies of the National Bureau of Economic Research.

One can enthusiastically applaud the decision to reprint. Dr. Mitchell's description and explanation of the sequence of interrelated changes that make up the cycle have become part of the accepted classics of economics. They are the foundation of every textbook chapter on business cycles. They are almost part of the folklore of the country, so thoroughly have they been incorporated into our thinking. It is good to have the original of a piece that has been translated (and paraphrased) so frequently.

Dr. Mitchell says in his characteristic way: "Friends tell me, and I like to believe them, that Part III still has value as a realistic account of what goes on within a business cycle." It does indeed. After all these years it reads astonishingly well. His description of the cumulative changes by which each phase of a cycle is transformed into its successor is almost as good a guidebook to the cycle now as it was when it was written. So stable are economic processes, so penetrating Dr. Mitchell's analysis.

Apparently the prolonged studies of the National Bureau of Economic Research have not caused Dr. Mitchell to change materially his theoretical position. Naturally the distribution of emphasis has

shifted, but one has only to compare the analysis of this book with that included in his article on business cycles, twenty years later, in the *Encyclopaedia of the Social Sciences* to see how few and how minor are the modifications he has been moved to make.

Those enthusiasts who (wildly) surmise that a new era in cycle theory opened about 1937 will doubtless regard this book as old-fashioned. And, of course, it lacks the growing apparatus of equations and econometric sequences that are the marks of present-day abstractions. But it will have the continued favor of all who admire shrewd and penetrating analysis based on a solid foundation of statistics. And it has the great advantage of not being stated in the technical language that has become such a formidable obstacle to the spread of economic education beyond professional circles. A reviewer of one of the more recondite of modern economic treatises remarked that it was a grand book, but a pity that it had to be written in Choctaw. This book is not written in Choctaw. Thereby it nourishes the hope that the time may yet return when any well-educated person will be able to read economic literature and take part in economic discussion. Mitchell's humane and scholarly presentation can serve the boardroom and the private library as well as the textbook shelf and the seminar.

J. A. Estey

Purdue University

Die wirtschaftliche Konzentration an ihrer Schicksalswende: Grundlagen und Aufgaben einer künftigen Trust- und Kartellgestaltung. By Fritz Haussmann. Basel: Verlag für Recht und Gesellschaft A.-G., 1940. Pp. xvi+435.

As the title of the book under review indicates, its author believes that "economic concentration"—that is to say, the increasing concentration of economic power in the hands of large concerns, combines, amalgamations, mergers, and cartels—has arrived at a crossroads of its development. He is convinced that the structure of the present economic system is largely determined by this process and considers it a foremost task of economic policy to regulate and control "big business." After having prepared the ground in two preceding volumes, the author devotes the present book to the difficult problem of outlining the principles of such a policy.

He approaches his problem from a legal and sociological point of view rather than from the economic angle and strongly argues that so

far the importance of economic concentration for the economic structure and the dangers resulting from it for the functioning of the economic machinery have consciously been underestimated; that the discussion of the problem involved here has centered almost exclusively on economic aspects connected with the efficiency of large concerns and cartels, their attempts to control production and prices, the role played by them in the process of organizing and rationalizing economic activity and the like (pp. 51 ff. and 418 ff.). In contrast to this view Dr. Haussmann fully indorses A. R. Burns's belief that in both the political and the economic sphere the greatest of all contemporary problems is that of deciding how great a concentration of power shall be permitted and that the problem is one of designing a pattern for the distribution of power that will minimize the evil of complete individualism and complete collectivism (p. 429). In the discussion of this problem Haussmann extends his analysis far beyond the scope of economic concentration in the narrower sense of the term and deals with some of the fundamental questions of social philosophy which are characterized by the antithesis: the individual versus collectivity (pp. 205 ff.). In his view no compromise is possible between an individualistic and a collectivistic organization of the economic system (p. 226).

Around this discussion of fundamental problems are grouped the main chapters of the book, three of which successively deal with the general importance of economic concentration: the causes, nature, and functioning of large concerns, combines, and cartels; the principles underlying the organization of combines and cartels. The fourth chapter is of particular interest; it surveys the policies so far adopted in the British Dominions, the United States of America, England, Japan, Germany, and Russia and outlines the principles of a policy designed to control and direct economic concentration. The scope of this policy is indicated by problems such as size-of-firm policy, interference with administered prices and market control, unfair competition, supervision of corporations, creation of enterprises owned or controlled by public authorities, and corporation taxes. Also, measures of international control of large concerns, corporations, and cartels are discussed.

In his book Dr. Haussmann has surveyed, analyzed, and critically examined a vast amount of German, American, English, French, and Italian literature; and any student of the problems of economic concentration will appreciate the book as a valuable source of information, even though he may not fully agree with the author's approach to his problem. The present reviewer feels obliged to raise a fundamental ob-

jection: in his effort to emphasize the sociological as against the economic aspects of economic concentration, Dr. Haussmann has completely overlooked the fact that, regardless of their identical sociological causes, large concerns, combines, and mergers are primarily brought about by prosperity conditions, whereas cartels are depression phenomena produced by falling prices and contracting markets.

It is doubtful whether an efficient economic policy can be devised in any field which does not take into account the effects of business fluctuations upon the functioning of the economic machinery.

KARL PRIBRAM

Washington, D.C.

The Newsprint Paper Industry: An Economic Analysis. By JOHN A. GUTHRIE. ("Harvard Economic Studies," Vol. LXVIII.) Cambridge: Harvard University Press, 1941. Pp. xxiii + 274. $3.50.

This is an important book on an important subject. It is concerned largely with the period since the last war and is divided into two sections, economic background and interregional competition. The first deals with consumption, resources, government regulations and policy including embargoes and tariffs, technical aspects, financial organization, transportation, marketing, and price policies. The section might be strengthened by a more extensive discussion of the significance of newspaper (as contrasted with newsprint) companies and especially of publisher mills, that is, those participating in newsprint production. The problems of newspaper organizations would suggest that the inelastic character of demand for newsprint is overemphasized especially in the radio period. The discussion of financial organization dismisses too hurriedly the history of individual newsprint companies, and no clear picture emerges as to the impact of the last war on the industry and of the disequilibrium which followed the elimination of Scandinavian competition and the expansion of sulphite production in North America. That "the prevailing price has rarely been much above total costs, and frequently has been far below" (pp. 125–26) suggests continuous internal strains of a more serious character than the discussion in the volume would substantiate.

These considerations weaken the arguments of the second part on interregional competition. It deals with costs of pulpwood, wages, power, fuel, supplementary costs, interest, transportation, and total costs and with Alaska and the southern states as potential producing

areas. In the last chapter on summary and conclusions the effects of rigidities in costs are shown clearly in the shift of transportation from rail to water routes. On the other hand, it may be doubted whether interest payments involve important rigidities, and it would be difficult to convince bondholders who have received no interest payments (p. 226). It is not clear how far stumpage and Crown dues can be regarded as economic rent (p. 224). It may be questioned whether the provincial embargoes were less important than the tariffs "in moulding the development of the industry" (p. 222). A more detailed description of the pre-1914 period might suggest a different conclusion. In general, the limitations of the volume are a result of the relative failure to stress the importance of institutional factors as a supplement to statistics. Nevertheless, we are grateful to the author for an important study in a strangely neglected field, and it is possible that a fuller discussion would not have brought different results. There are appendixes, a bibliography, and an index.

H. A. INNIS

University of Toronto

Some Factors Affecting the Supply of Milk and Milk Products in Nova Scotia. By WILFRED J. GARVIN. (Ph.D. dissertation, Catholic University of America.) Washington, 1941. Pp. viii+155.

Starting with the observation that the total volume of milk production in Nova Scotia is substantially less than the total disappearance of milk and milk products within the province, the author investigates the possibilities of profitable expansion of milk production in the province. Creamery butter production was found to represent the marginal utilization of milk, and the study was confined largely to that market outlet. Analysis indicated that increased efficiency of creamery operations would only partly meet the problem of successful competition with butterfat producers in competing areas. It was concluded that milk production costs on dairy farms in the province must be reduced and that this achievement is possible in some degree through better farm practices involving public educational and financial aid.

The study is a workman-like job which exhibits good use of the appropriate theoretical and statistical techniques. It is interesting to note that the author found monopolistic marketing conditions in both major provincial milk markets and also in the smaller town markets. Product differentiation flourishes owing to lack of uniform-quality standards, and entry to market is not free.

The author discovered many inefficiencies in the system of cream collection and creamery operation. His conclusion agrees with that reached in New Zealand; viz., that since competition among creameries cannot be relied upon to secure low cream collection costs and high utilization of creamery capacity, some regulation and over-all planning in the creamery industry is desirable, even to the extent of public utility regulation. New Zealand did not find it necessary to go that far.

The author has shown that it may be necessary for Nova Scotia farms to become larger units in order to become substantially more efficient units, but he also points out many difficulties in the path of this achievement. The net result leaves the reader wondering whether the possibilities for cutting milk production costs are sufficient to justify considerable expense on the part of the provincial government.

PATRICK E. O'DONNELL

Washington, D.C.

The Coal Industry: A Study in Social Control. By GLEN LAWHON PARKER. Washington: American Council on Public Affairs, 1940. Pp. iii+198. $3.00.

In this study the developing consciousness that the public interest cannot tolerate an economically sick coal industry is traced from the early investigatory period to the promulgation of minimum prices under the Coal Conservation Act of 1937. Beginning with an outline of the economic characteristics of the industry, the book proceeds to show how owners, workers, consumers, and the public have fared under the system of private control. The conclusions are that private control resulted in a wasteful use of labor and capital, failed to conserve coal resources, and fell far short of performing in a manner satisfactory to any of the groups with an interest in the industry. These conclusions are not new, but the arguments are well presented and they serve as an introduction to an accounting of the efforts made to secure better results through stabilization of the industry.

The account from the World War I period through the experience under the N.R.A. is given in some detail. Treatment of the Bituminous Coal Conservation Act of 1935 is sketchy, however. The first of these acts was continuously under a cloud regarding its constitutionality, and there has to date been too little experience under the second to make worth while an appraisal of results. The author believes that the latter act has a good chance of achieving its goal of stabilization of the indus-

try through minimum-price regulation, but he quarrels with this goal as being too limited.

Conservation of coal resources and better utilization of all energy resources require, he argues, not further extension of governmental regulation, but governmental ownership of the basic resources coupled with private operation under a royalty system. He goes to no great lengths, however, to support this thesis, and the final chapter on the problem of control can be regarded as an addendum to the historical presentation in the body of the study.

In any book an occasional typographical error can be ignored, but the extremely large number in this book require comment. Also, the careful reader will find burdensome the necessity of referring to the back of the book for all footnotes.

In spite of these technical faults, the book is a worth-while addition to the literature of the coal industry.

THEODORE A. VEENSTRA

U.S. Department of Labor

Industrial Opportunity in the Tennessee Valley of Northwestern Alabama. By HERMAN FREDERICK OTTE. New York: Columbia University Press, 1940. Pp. x+177. $2.25.

This well-documented monograph traces the industrial history of that part of the Tennessee Valley area lying within the state of Alabama and including Huntsville, Decatur, and the Muscle Shoals district. A fairly detailed appraisal of the area's present resources and the probable effect of the Tennessee Valley Authority navigation and power developments leads the author to the conclusion that a moderate and beneficial growth of industry is in sight. Many of the author's observations apply to the South, or to the less industrialized parts of the United States, as a whole; some apply to the whole T.V.A. region and to similar river-basin development areas.

An instructive episode in the history of northwestern Alabama was the industrial promotion boom of the 1880's and 1890's, founded upon extravagant hopes as to local iron-ore resources and Tennessee River navigation. Birmingham's better ore and the rail-transport advantages of competing areas pricked this bubble, and the iron industry completely disappeared. In the meantime, timber resources were being depleted, and the substantial advantage of cheap surplus labor was steadily building up textile mills around Huntsville.

A second promotional flurry followed the Muscle Shoals development of 1917, with hydroelectric power as an added factor of which much was expected. Since 1933, local expectations have been profoundly influenced by the power and navigation plans of the T.V.A.

The author's appraisal of the actual resources and prospects of the area is commendably impartial and discerning. He sees a continuance of the growth of textile and similar industries on the basis of low labor costs, with the development of skill and management ability compensating for the progressive narrowing of the differential between northern and southern wages. This factor the area shares with the rest of the South.

Another genuine advantage is cheap hydroelectric power, in which the area has a superior, though not unique, position. Electroprocess industries can be expected to develop there to the extent that the necessary materials are available.

In his conservative appraisal of the material resources of the area, the author sets an example which should be called forcibly to the attention of promotional and planning agencies. He demonstrates effectively that the mere enumeration of useful materials available in an area is pointless unless locational factors can be combined at a total cost at least as low as in competing areas. The region in question has no outstanding raw-material resources. Its iron ore and bauxite are low grade; and clay, limestone, and other common materials are of local importance only. Coal is less cheap than in many other districts. Agriculture provides materials for the usual local canning and preserving industries, as well as cotton and cottonseed; but it has been demonstrated before that a local cotton supply is a negligible factor in locating textile mills.

In the matter of transportation to outside markets, the northwestern Alabama area is only moderately well off, with but one main-line railroad route. The author does not expect very intensive use of the Tennessee River as an artery of water transport for the area's products, because of its extreme circuity in reaching all important markets.

The industries in which growth can most confidently be expected include textiles, certain electrochemical processes, and mechanical-pulp paper—based on cheap labor, electric power, fast-growing pulp stock, and good water supply. None of these factors is narrowly localized; in fact, they all extend considerably beyond the area in question. Few would disagree with the author's conclusion that intelligent planning

and industrial promotion should be on at least a regional, as distinct from the usual local, basis. The role of the T.V.A. in fostering a broader community of interest is deservedly stressed.

EDGAR M. HOOVER, JR.

University of Michigan

Financing the War: Symposium Conducted by the Tax Institute, December 1-2, 1941, Philadelphia. By the TAX INSTITUTE. Philadelphia, 1942. Pp. ix+357. $2.50.

This is a volume of papers presented by eighteen tax authorities on various phases of war financing. It reflects a divergence of opinion concerning the most suitable methods of paying for the present conflict but a common aversion to the evils of inflation. Gaps are inevitable in an effort to cover within a reasonable space the gamut of problems arising in the financing of a global war, and the reader may wish for a fuller discussion of counterpoints in certain of the arguments and may also feel that some of the repetition of statements could well have been culled; but the volume serves admirably to bring together the well-timed opinions of experts on urgent financial problems.

In the opening paper by Robert Warren it is stated that the function of war finance is "to provide for the requisite military effort, to distribute equitably the pecuniary sacrifices required by this effort, and to forestall the development of vested interests in the indefinite perpetuation of the war society." The writers consistently agree upon the necessity of heavy taxation both to finance the war and to check inflation, but, as Alzada Comstock indicates, taxation alone is not adequate for the latter purpose, and no writer assumes that borrowing may be avoided. In what directions shall taxes be increased? Heavy taxation of corporation profits, normal and excess, is taken for granted. Simeon Leland would extend the personal-net-income tax instead of adopting a general sales tax, but, if the conventional income, excise, and pay-roll taxes are not sufficiently exploited, he would turn to a retail sales tax. Somewhat similar views are shared by Denzel Cline. Albert Gaylord Hart sees little choice between forced loans and the enlargement of the personal-income tax, but he prefers the latter. Walter W. Heller assumes the desirability of forced loans and proposes the additional device of current income tax collections at the source through the purchase of tax-anticipation stamps. From Harley L. Lutz, the avowed

foe of progressive taxation, comes the suggestion for a universal gross-income tax—a scheme for which the other participants displayed scant sympathy.

An interesting paper by F. E. Seidman scores the inequalities and alleged inflationary tendencies of our excess-profits taxes. Charles C. Abbott propounds an ingenious scheme of withholding from payments on debt a portion to be invested in government bonds, while E. Gordon Keith explains the principles of noninflationary borrowing. Some interrelations of federal, state, and local taxation are discussed by Charles L. Kades, Chester B. Pond, and Charles P. White; and war finance in England and Canada receives the attention of Brinley Thomas and William H. Wynne.

Over the effects of tariffs and trade restrictions upon the generation of wars, Benjamin B. Wallace and Grayson Kirk display differences of interpretation, the former belittling these effects and the latter giving them more emphasis. Both writers agree upon the desirability of promoting a freer trade among the nations, however, and both emphasize the predominant importance of political forces in shaping economic policies. All in all, the volume will provide lively reading for students of war financing, who will find the financial problems of total war attacked vigorously from many angles. If the reader finds himself somewhat confused by the abundance of ideas, he may take solace in the thought that expert minds are working on the financial front of the war and that out of such free exchanges of opinion there will gradually emerge the outlines of our fiscal program.

ALFRED G. BUEHLER

University of Pennsylvania

Federal Crop Insurance in Operation. By J. C. CLENDENIN. ("Wheat Studies of the Food Research Institute," Vol. XVIII, No. 6.) Stanford University, Calif.: Food Research Institute, Stanford University, 1942. Pp. 62. $1.25.

This report is based on an intensive study of the Federal Wheat Crop Insurance Program. The author has drawn from practically all sources of information for his study, including regulations, procedures, general informational material, basic data, operating data, conferences with employees (both headquarters and field), questionnaires sent to farmers and businessmen, and an independent field survey of his own. Much of the detail has been placed in footnotes or appendix rather than

in the text, and the good balance maintained between technical and general features makes the report a very readable document.

The report deals with the elements of the insurance contract, actuarial features, administration, volume of business, finances, unit costs, and public policy aspects. The study covers insurance of wheat only; a brief statement of the new cotton-crop insurance program is included in the Appendix. Appendix notes also cover crop-insurance experience of private companies, crop insurance in foreign countries, research on other crops, and summary data for all states and selected counties.

The author believes the plan of yield insurance rather than guaranteeing value is simple and is "unquestionably wise" because the price risk appears not to be insurable on a sound basis. The contract guarantees to indemnify the insured producer to the extent that the crop falls short of 75 per cent (or 50 per cent, if selected) of the average yield of his farm. It is pointed out that even 75 per cent of the average yield ordinarily represents no more than the cost of producing the crop. The terms of the insurance contract are broad, with protection covering practically all hazards beyond the control of the insured but not negligence, malfeasance, theft, fraud, or unsound farming practices. No protection is offered against damage to quality.

The plan of "insurance in kind" involves the determination of premiums and indemnities in wheat, although most of the actual transactions occur in the cash equivalent thereof. It involves also the carrying of premium reserves in wheat—a feature which the author believes could be dispensed with, since over the long period price changes would probably result in a balance of losses and gains.

The administration of the program is outlined, but no reference is made to the branch offices of the Federal Crop Insurance Corporation except in one sentence in the summary of the report. The author is critical of the predominance of Agricultural Adjustment Administration officials on the Board of Directors and of some provisions co-ordinating the crop insurance and the agricultural conservation programs. He believes that the county Agricultural Adjustment Administration committees in a great majority of cases think it their function to administer the program honestly but in the best interest of their local clientele. If they think the rates are too high or that for some other reasons the odds are against the insured, they do not try to sell the insurance. The cost of administration through the Agricultural Adjust-

ment Administration committees is probably less than the cost of maintaining a separate field organization.

The report is critical of the three-year record of paying out more indemnities each year than the premiums collected; the author lays the blame primarily on the actuarial data and methods and on adverse selection of risks. This conclusion is oversimplified for a program that has many ramifications. It is also possibly misleading. The actuarial work is only partly a centralized rate-making job as ordinarily conceived in insurance. The individual rating plan necessitates the establishment by county and community committees of yields and premium rates for every farm that might be insured. It involves the gathering, reviewing, and revising of yield data as well as the computing and, in maybe half of the cases, the appraising of average yields and premium rates. This work has been a constant vital problem. It involves national, branch-office, state, and local administration. The author is a bit inconsistent also, since he states in one place, "Though some important details need improvement, there is at hand no better basic actuarial approach to crop insurance than the one now in use"; and elsewhere, "This statistical approach is probably as sound as any which could be devised at present."

The singling-out of actuarial phases and adverse selection as the primary causes of loss tends to dismiss other factors as inconsequential. Adjustment of losses should probably be mentioned also, despite the fact that the author generally finds them to be reputed as fair, sometimes "overgenerous" and sometimes "stingy." The author calls attention to the fact that these losses were incurred in relatively good crop years. It is true that the national average yield was good, but the crops were not uniformly good. Severe droughts affected the 1939 and 1940 crops in the hard winter wheat area, and winterkill did heavy damage to the 1941 crop over a wide area.

Probably about 18 per cent of the wheat acreage of the country is insured. The participation is lower than would be expected in the highest risk areas. Premium rates there are very high. The author believes that this is the area that needs insurance most, whereas the insurance in low-risk areas is convenient rather than essential.

One section of the report deals rather extensively with per unit costs of administration, a cost borne by separate appropriation. These averages indicate high costs per bushel of premiums in areas of small farming units and areas of low rates, making the average cost for the coun-

try thirty-three cents. Hence the author does not believe that any considerable part of the administrative costs could be added to the premium rates to make the program self-supporting unless the participation is increased substantially. His estimates of further reduction in per bushel costs through continued increased participation are probably too small, since he assumes that all field costs are variable costs. If such increased participation cannot be obtained, he suggests possible withdrawal of the insurance program from nonhazardous areas of low participation.

A number of the author's suggestions for study and experimentation represent proposals that were already under consideration by headquarters or field employees; some of them are by now adopted and others are under study at the present time. These include the three-year contract and reduction of premiums for farmers with superior loss records—provisions adopted for the 1943 and subsequent programs—and the elimination of the practice of carrying reserves in wheat, a problem that is now being studied.

There are a number of inaccuracies and some incorrect assumptions which could have been corrected with benefit to the report had it been reviewed with the Corporation before its final draft. The reviewer does not agree with the report in many respects but believes it presents a good over-all picture of the program and is a valuable addition to the literature on the subject.

WILLIAM H. ROWE

Federal Crop Insurance Corporation
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Foundations of a Modern Guild System. By REV. HAROLD FRANCIS TREHEY. Washington: Catholic University of America Press, 1940. Pp. xi+204.

The purpose of this monograph is threefold: to show that the Catholic church has a definite social and economic philosophy; to describe the practical application of that philosophy in the past and indicate the manner in which, if applied today, it would lead to the formation of a modern guild system; and to analyze the functions of such a system in a democratic society and its relations to the modern democratic state.

The Catholic church, Dr. Trehey tells us, rejects both laissez faire individualism and modern totalitarianism. It seeks the establishment

of an organic society based upon certain fundamental principles clearly defined by Catholic teaching. Among the most important of these are the principle of individual liberty within the bounds of justice and charity, the principle of organic structure, in the light of which society is to be viewed as a harmonious whole in which interdependent individuals are called upon to co-operate actively in the achievement of the common good, and the principle of intervention, which asserts that in certain instances it is not only the right but the duty of public authority to intervene in the economic and social order on behalf of social justice and individual and social well-being.

It is these and certain other fundamental principles of social organization which Dr. Trehey discusses in detail that inspired the guild system of the Middle Ages and that, in his view, must lead to the creation of a similar system in our day.

The modern guild system which Catholic social reformers envisage is to be brought about by the establishment, in all the major branches of economic activity, of self-governing occupational groups of employers and workers under the control but not the order of public authority. The main goals of the system are to be the defense of group interests, collective bargaining, and the negotiation of collective labor agreements, professional education, unemployment and other forms of social insurance, and the development of a new spirit of solidarity and fraternity among the workers, leading to greater security, confidence, and pride of accomplishment.

Differing with the proponents of occupational representation who seek the establishment of a national parliament, consisting of the representatives of occupational groups (guilds) rather than of political parties, Catholic writers believe that occupational guilds should have no primarily political functions and should not seek to participate directly in the government of the state. Their goal, rather, should be exclusively social and economic and their functions in relation to the state, with which legislative decisions should ultimately rest, purely advisory.

Taken as a whole, Dr. Trehey's study represents a diligent, well-organized, and therefore useful account of Catholic teaching on modern social-economic organization; the author's own contributions to the established body of opinion and doctrine, however, are few, and he makes no attempt at all to explore such important problems as those of

the danger of monopoly, of greater price rigidity, and of price-fixing, which the establishment of a modern guild system would be certain to entail.

WILLIAM G. WELK

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The American Miners' Association: A Record of the Origin of Coal Miners' Unions in the United States. By EDWARD A. WIECK. New York: Russell Sage Foundation, 1940. Pp. 330. $2.00.

No worker is more important both to industrial development and to the labor movement than the coal miner. No work is so dangerous for so many men or, it would seem, so compelling or so much at the mercy of forces beyond their control. Any new light on the miners is welcome, and Mr. Wieck has cast new and revealing light on the first miners' union in the United States—the Miners' Association.

The story is itself important, but more significant than the story are the conclusions, some of which may be questioned.

Mr. Wieck starts out with the bold assertion that the American Miners' Association, 1861–67, "initiated the modern labor movement in the United States" (p. 21) and concludes that the Association was "unique," because "in outlook and policy it was in advance of the typical trade union of the sixties, and actually set the pattern for the typical trade union of today" (p. 213).

In other words, the Association was unique because it was typical first. But, of course, it was not first, and the fact that it never became strong and lasted only through the Civil War suggests that it was not typical.

But it was a good union composed of skilled, intelligent, and homogeneous workers under able leadership. Like all miners' unions, it conciliated the operators when it could get them to listen. It sought and gained protective legislation without going into party politics. And it had a hard time getting organized nationally, largely because soft coal is found all the way from Pennsylvania to Colorado and from Texas to Lake Erie.

Mr. Wieck makes an interesting point in discussing the industrial nature of the miners' organizations. It is not due, he says, to experience in the Knights of Labor but to technology—the overwhelming number of actual miners in relation to laborers and other crafts employed in

and around the mines. He calls the Association a craft union of miners. In later years the division of skills became important, but by that time the tradition of one coal diggers' union had been formed. To this he adds the isolation of mining communities, and another factor is undoubtedly the long history of the organized miners as compared with the machinists', engineers', and other craft unions associated with the industry.

Another point of interest is the success of the Association in sticking to pure and simple trade-unionism and in avoiding politics and reform. Mr. Wieck attributes this to rank-and-file leadership, but the leadership seems to have been exceptionally good, and, as the Association lived little beyond the Civil War, it is not a fair test. Hinchcliffe, who, though not a miner, was as much a leader of the union as anyone if not more so, actually was a prominent reformer of the period, like Sylvis of the molders.

Mr. Wieck has told a good and important tale well. Some of his interpretations may be questioned, and it was not really necessary to make exaggerated and illogical claims for a fine but impermanent union of the Civil War period.

NORMAN J. WARE

Wesleyan University

The Economic Bulletin, Vol. I, No. 1: *Economic Aspects of the War: Contrasts and Resemblances, 1914 and 1939;* Vol. I, No. 2: *Governmental Economic Planning;* Vol. II, No. 1: *The Securities Market and Our Financial Preparedness for the Eventuality of War*. By BENJAMIN M. ANDERSON, JR. Los Angeles: Capital Research Co., 1939 and 1940. Pp. 28, 24, and 23.

The first of these three pamphlets is essentially a factual compilation. As the author states it, he has "preferred to present information rather than predictions" (p. 28). Indeed, he could not foresee the economic developments of this war, but offers a useful condensation of statistical and similar material referring to foreign trade, gold movements, price developments, etc., during the last war.

The two other pamphlets are more interesting. They restate Dr. Anderson's economic philosophy, well known to students. It is not based merely on belief in the capitalistic system and free competition. By implication, at least, Dr. Anderson exhibits a nostalgia for the

1920's with their monopolistic developments and speculative exuberance. He argues against government interference to the extent of urging that even railroad and public utility rates should be determined on the basis of what he calls a "functional price," assuming that "the great market, if kept competitive, will itself automatically work things out." All postwar troubles are charged to the account of government policy. Bastiat could not have been more naïve a century ago.

As to the securities market, the author's particular ire is directed against the S.E.C., mainly on the argument that its regulations do not permit corporations to support their stocks on the market, that they create uncertainty on the part of dealers as to what is or is not permitted, and that they bring about frequent "inquisitorial visits." Nothing indicates better an inveterate bias than Dr. Anderson's argument that the government should be interested in maintaining "a productive and active stock market"—on the pattern of the wild speculative era—because such a market supposedly guarantees the financing of the war: the owners of stocks can sell them out at high prices and buy the equivalent amount in bonds! It does not occur to the eminent economist-author that such high prices for stocks would only bring about major stock-liquidation and the purchase of government bonds, if the latter are accordingly low in price. Nor does it seem to occur to him that such a market would be part and parcel of a general inflation trend. Apparently, Dr. Anderson has not been impressed by the inflation experiences of the past and is willing to take a chance on another one.

MELCHIOR PALYI

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The Plantation South, 1934–1937. Prepared for the DIVISION OF RESEARCH, WORK PROJECTS ADMINISTRATION, by WILLIAM C. HOLLEY, ELLEN WINSTON, and T. J. WOOFTER, JR. Washington, 1940. Pp. xxii+124.

The unusual value of this report lies in a novel application of the sample method. By taking the same sample in two different years, 1934 and 1937, the data obtained are influenced, of course, by marked

changes in universal factors (climate, price, production control). The authors had, therefore, the rare opportunity to show how these changes affected a whole *body* of strongly interrelated economic and social functions.

The "body" in question is the cotton plantation of the Southeast, i.e., a tract with five or more resident families, including the landlord, which is operated as a single-unit plantation by the owner or his manager. The sample itself consists of 246 plantations reporting all the pertinent data of their management both for the plantation as a whole and for the individual families working on it. For the purposes of the study this material is subclassified according to size and character of the holdings, location (nine subregions), and type of labor (wage-earners, croppers, share tenants, and renters). As indicated, the report embodies the results not only of one but of two identical surveys, the cotton plantation survey of the crop year 1934, published as Research Monograph V (*Landlord and Tenant on the Cotton Plantation*), having been repeated for the crop year 1937. In these two years cotton was raised and harvested under very different circumstances. In contrast to 1934, there was no compulsory crop-control program in force in 1937. The area under cotton was unusually large in 1937, and, since very high yields were obtained, a crop of almost double the size of 1934 was harvested. Lower prices notwithstanding, the gross income per crop-acre rose by more than one-third. It is from this background that the report comments most ably on the recent changes in the operation of cotton plantations and elucidates the impacts of these changes on the incomes of landlord, tenant, and farm hand.

The report is by no means confined, however, to the farm management side of plantation life or, for that matter, to the plantation. The last three chapters broaden out into a lengthy and spirited discussion of the relief needs of the South, of living conditions, and of programs and policies of local and federal character. The South's most pressing problems are unfolded, and the prediction is ventured that "with substantial agreement of enlightened opinion as to the things which need to be done . . . . major achievements will result." Certainly, the report itself stands out as a significant contribution toward this desired end.

RUDOLF FREUND

University of Virginia

The Reciprocal Trade Agreements Program. By GRACE BECKETT. New York: Columbia University Press, 1941. Pp. xiii+142. $2.00.

Grace Beckett has written a useful handbook to the Hull trade agreements program. Originally the middle section of a dissertation, the book presents basic data concerning the agreements without seeking to evaluate the policy itself. Chapter i summarizes the history of the program, from the original amendment of the Tariff Act of 1930 through the latest congressional renewal of the grant of power. (The author unaccountably fails to mention Larkin's *The President's Control of the Tariff* when discussing tariff flexibility before 1934.) Chapter ii describes the procedure of making agreements, their structure, and various devices—such as the customs quota—used to deal with special problems. Here are Miss Beckett's helpful and carefully compiled data on reclassification, first presented in this *Journal*. The author's conclusion that "reclassification has not been overworked" as a means of applying the chief supplier doctrine is undoubtedly sound, but she fails to mention several specific abuses of the practice which have occurred. Chapter iii summarizes the "general provisions" of the agreements, with footnote references enabling one to consult immediately the relevant articles in each agreement. The digests in chapters iv and v of the most important concessions exchanged on specific commodities are among the most useful reference features of the book.

At the beginning of her final chapter Miss Beckett states clearly the limitations of simple statistical methods in measuring the effects of the agreements on our foreign trade and the difficulty of establishing causal connections between tariff changes and trade movements. For these reasons the various statistics presented in the rest of the chapter can give only a rough indication of some possible effects of the agreements on our trade. Among the most interesting of the many tables in the book are those showing the changes in imports by individual foreign countries from the United States and other countries of products on which different types of concessions and no concessions at all were made. Miss Beckett concludes that the agreements have "affected substantially the foreign trade of the United States" and that "as a stop-loss device, the program has been important." The Index is spotty, so that the book's proper function as a reference work may be somewhat hampered. On the whole, the book is carefully prepared and

well arranged. It is a very useful compendium of the trade agreements program and certain related trade data.

WILLIAM DIEBOLD, JR.

Council on Foreign Relations
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Federal Reserve Chart Book, I: *Federal Reserve Charts on Bank Credit, Money Rates, and Business* (1941), pp. 73, $0.50; II: *Federal Reserve Charts on Industrial Production* (1940), pp. 229, $1.00. Washington: Board of Governors, Federal Reserve System.

Since October, 1938, a research convenience amounting to a major implement has been furnished by the Federal Reserve Board in the form of a book of charts, a compilation of material on currency, credit, treasury finance, money rates, security markets, prices, business conditions, and international finance. This material, prepared by the Division of Research and Statistics for the use of the Board of Governors, now appears in revised and enlarged form in *Chart Book*, I (1941).

Figures for most series, e.g., currency, credit, money rates, and prices, date back to 1919 and even to 1914, and many new indexes appear on production, construction, and other volume series. For those who may want to keep the charts up to date, a cross-section scale is provided through 1942 on nearly all charts. Sources of material are official. A convenient index facilitates the use of this volume.

Chart Book, II, *Industrial Production*, is a new contribution of especial interest and usefulness. Industrial production indexes, next to price indexes, are the ones most commonly used as a measure of business activity.

The over-all index of industrial production, first available in the early 1920's and covering the post-war period, was revised in 1927 and again in 1940, when a major revision was effected and a new base period (1935–39) replaced the old 1923. The August, 1940, number of the *Federal Reserve Bulletin* gives a full account of the construction of this new index, and an article on "Measurement of Productivity" in the September, 1940, *Bulletin* treats weighting of the various series.

Some controversy arose when this index of production was first announced (e.g., *Cleveland Trust Bulletin*, September, 1940, answered in *Federal Reserve Bulletin*, October, 1940). Although there may be some question concerning the base period adopted and the timing of intro-

ducing the change (an alleged political motive in showing exaggerated business recovery in an election year), most statisticians agree that the revision was long overdue and that the job has been well done. In fact, the work has been in progress at least since 1934, when it was fully recognized that existing defects in the index called for correction.

Already new criticism has arisen that the index omits important output which should be shown, namely, the defense industry activities such as tanks, guns, ammunition, which are only indirectly and in part reflected in figures for steel, chemicals, etc.

These two Federal Reserve chart books, supplemented by the Bureau of Labor Statistics charts on wages, hours, etc., and perhaps by the National Resources Committee Federal Chart Book (which, however, has not been brought up to date since January, 1938), give the worker a nucleus of highly useful material covering almost all phases of finance and business activity, and, of these, the Federal Reserve chart books are for all general purposes the best sources available. A dollar and a half buys a statistical service unequaled at any price elsewhere.

JAMES WASHINGTON BELL

Northwestern University

The Spoil of Europe: The Nazi Technique in Political and Economic Conquest. By THOMAS REVEILLE. New York: W. W. Norton & Co., Inc., 1941. Pp. 344. $2.75.

To the average American, Nazi Germany is something of an exciting mystery. The interest in popular and preferably "firsthand" attempts to decipher this mystery is accordingly great. A substantial body of books has grown up which pretends to offer a short cut to the understanding of the puzzle which naziism presents to the "normal" mind.

"Fools rush in where angels fear to tread" would be a proper motto for the type of literature in question. *The Spoil of Europe* is typical of this category, similar to the books of Shirer, Miller, John Gunther, Stephen H. Robert, R. A. Brady, Edgar Mowrer, K. Löwenstein, Fodor, Tolichus, Deuel, and others. The outstanding feature in this type of literature is the compilation of more or less known facts (or gossip), on the one hand, and dramatic presentation, on the other. In the latter respect the present book is less spectacular than many of its predecessors, but it is better founded than most of them with regard to the amount of factual material brought together. However, that material

is largely known and partly from doubtful sources. Moreover, it lacks interpretation in the sense of an analysis which would distinguish between the superficial and sensational data and the elements relevant to the understanding of the "system." Its emphasis is on administrative rather than on economic aspects of naziism. The compilation of some of the material on administrative changes, drawn from German periodicals, may be worth recognition. But, on the whole, the purpose of the author seems to be to spread propaganda heat rather than intellectual light.

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